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ANNUAL REPORT

OF THE

County Medical Officer of Health,

County Donegal

ON THE

Health and Sanitary Conditions

of the County

AND ON THE

County School Medical Service

YEAR 1941.

RCB | 37i

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Roinn na Sláinte Puiblidhe,
Srath an Urláir,
Co. Dhún na nGall.

Do Chathaoirleach agus Comhaltaí
Chomhairle Chonndae Dhún na nGall.

A Dhaoine Uaisle,

Is mór agam d'onóir an cuntas cinn-bliadhna seo do chur fé nbhúr mbrághaid fé mar atá de dhualgas orm do réir na n-ordughad so leanas: Ordughadh na Liaigh-Fheadhmannach Conndae, 1926, agus Ordughadh Sláinte Puiblidhe (Liaigh-Riaradh Leanbhaí) a 1920.

Mise, le meas,
M. BASTABAL,
Liaigh-Fheadhmannach Conndae.

June, 1942.

DONEGAL BOARD OF HEALTH.

STAFF OF PUBLIC HEALTH DEPARTMENT

Year ending 31st December, 1941.

County Medical Officer of Health :

M. S. BASTABAL, M.D., D.P.H., (M. J. Bastible).

Assistant County Medical Officers of Health :

M. J. McCOLGAN, M.B., B.Ch., B.A.O., D.P.H., B.Sc., L.M.

R. HAYES, M.B., B.Ch., B.A.O., D.P.H., B.Sc. (P.H.) L.M. (Resigned).

J. A. DUNLEVY, B.Ch., B.A.O., D.P.H. (Temporary).

County Ophthalmic Surgeon (Part Time) :

G. O'DONNELL, M.B.

School Dental Officers (Part Time) :

JOSEPH R. KELLY, B.D.S.
J. VINCENT CALLAGHAN, L.D.S.

Public Health Nurses :

Full Time ;

MISS ANNE CASEY.

MISS MARGARET T. McLAUGHLIN.

MISS C. O'CONNOR.

Part Time—THE JUBILEE AND DUDLEY NURSES employed in the following areas :—Annagry, Ardara, Arranmore, Ballybofey and Stranorlar, Ballyshannon, Bruckless, Buncrana. Bundoran, Carndonagh, Carrigart, Clonmany, Convoy, Derrybeg, Donegal, Doochary, Drumholm, Dunfanaghy, Dungloe, Fahan and Inch, Fanad Upper, Fanad Lower, Frosses, Glencolumbkille, Glenfin, Gortahork and Falcarragh, Kilcar. Letterkenny, Lifford and Castlefin, Malin, Manorcunningham, Moville, Muff and Upper Moville, Ramelton, Rathmullan and Glenvar, St. Johnston.

Clerk : SEAMUS O CEALLAIGH.

PART I.

ANNUAL REPORT

of the

COUNTY MEDICAL OFFICER OF HEALTH

COUNTY DONEGAL,

on the

HEALTH AND SANITARY CONDITIONS

OF THE COUNTY.

YEAR 1941.

ANNUAL REPORT ON THE HEALTH AND SANITARY CONDITIONS of the COUNTY.

YEAR 1941.

POPULATION.

The population of County Donegal, comprising an area of 1,193,581 statute acres, was 142,310 according to the revised Census of 1936. The population for the several years from 1821 to 1936 was as follows :—

1821	...	248,270	1881	...	206,035
1831	...	289,149	1891	...	185,635
1841	...	296,448	1901	...	173,722
1851	...	255,158	1911	...	168,537
1861	...	237,395	1926	...	152,508
1871	...	218,334	1936	...	142,310
			1941	...	142,600

The following shows the distribution of the population according to Urban and Rural Districts since the Census of the year 1911.

DISTRICT.	1911 Census	1926 Census	1936 Census
URBAN DISTRICTS.			
Buncrana U.D. ...	1,874	2,309	2,295
Bundoran U.D. ...	2,116	1,339	1,351
Letterkenny U.D. ...	2,194	2,308	2,649
RURAL DISTRICTS.			
Ballyshannon R.D.	7,772	7,509	6,628
Donegal R.D. ...	19,616	16,552	14,780
Dunfanaghy R.D.	15,471	14,252	13,559
Glenties R.D. ...	32,800	30,081	27,562
Inishowen R.D. ...	33,937	30,545	28,285
Letterkenny R.D. ...	9,961	8,782	8,496
Milford R.D. ...	19,293	16,884	15,497
Stranorlar R.D. ...	23,503	21,947	21,090
TOTALS	168,537	152,508	142,192

Letterkenny, Buncrana, Bundoran, and Ballyshannon are the four largest towns in Donegal.

The following table shows the population of the towns in County Donegal, according to the 1936 Census.

Towns with Population over 200.		Towns with Population under 200.	
Town.	Population.	Town.	Population.
Letterkenny, ...	2,649	Creeslough, ...	199
Buncrana, ...	2,295	Cross Roads, ...	171
Ballyshannon, ...	2,223	Killygordon, ...	165
Bundoran, ...	1,352	Kilmacrenan, ...	155
Donegal, ...	1,315	Carrigans, ...	154
Moville, ...	937	Clonmany, ...	123
Rathmelton, ...	924	Carrowkeel, ...	120
Raphoe, ...	754	Kilcar, ...	117
Ballybofey, ...	736	Manor Cunningham,	117
Carndonagh, ...	660	Carrickart, ...	115
Killybegs, ...	631	Muff, ...	114
Dungloe, ...	593	Carrick, ...	112
Lifford, ...	478	Malin, ...	112
Stranorlar, ...	462	Culdaff, ...	95
Ardara, ...	442	Ballindrait, ...	91
Rathmullan, ...	402	Laghey, ...	85
Dunfanaghy, ...	386		
Milford, ...	377		
Castlefin, ...	374		
Convoy, ...	369		
Glenties, ...	360		
Mountcharles, ...	313		
Ballintra, ...	287		
St. Johnston, ...	272		
Pettigo (pt. of) (a) ...	251		
Dunkineely, ...	235		
Newtown Cunningham,	207		

(a) The remainder of the town of Pettigo is in District Electoral Division of Clonelly, Fermanagh County.

Registration of Population. (31/1'42).

INCREASE OF 21,300 SINCE 1936 CENSUS.

Preliminary results of the population of the State, as ascertained at the time of compilation of the register of population last November, show an increase of 21,300 compared with the 1936 census.

The population, according to provinces, shows an increase of 43,300 in Leinster, of which Dublin County Borough and Dublin County account for 31,300, but a decrease in each of the other provinces :—Munster, 4,100 ; Connaught, 13,300 ; and Ulster (part of), 4,600.

Below are the figures for the counties :—

(Figures are to the nearest hundred ; 1941 figures subject to correction).

COUNTY.		1936 26th April	1941 16th Nov.	Change since 1936
Carlow,	...	34,500	34,100	—400
Dublin Co. Boro',	...	468.100	489,300	+21.200
Dublin County,	...	118,800	128,900	+10.100
Kildare,	...	57,900	63,500	+5,600
Kilkenny,	...	68 600	68,300	—300
Laoighis,	...	50,100	49,900	—200
Longford,	...	37.900	37,800	—100
Louth,	...	64,300	65,700	+1,400
Meath,	...	61,400	65,100	+3.700
Offaly,	...	51,300	51,600	+300
Westmeath,	...	54,700	56 700	+2,000
Wexford,	...	94,200	93,800	—400
Wicklow,	...	58,600	59,000	+400
Total Leinster,	...	1,220,400	1,263,700	+43,300
Clare,	...	89 900	88,300	—1,600
Cork Co. Boro',	...	80,900	76.800	—4,000
Cork County,	...	275,200	275.300	+100
Kerry,	...	139.800	139.600	—200
Limerick Co. Boro'	...	41,100	42,500	+1.400
Limerick County,	...	100 100	100.900	+800
Tipperary,	...	137,800	137,400	—400
Waterford Co. Boro',	...	28.000	28,500	+500
Waterford County,	...	49,600	48.900	—700
Total Munster,	...	942.300	938.200	—4.100
Galway,	...	168.200	168.500	+300
Leitrim.	...	50,900	48.400	—2.500
Mayo.	...	161 400	154,400	—7.000
Roscommon,	...	77,600	76,200	—1.400
Sligo	...	67,400	64.700	—2,700
Total Connaught,	...	525.500	512.200	—13.300

Cavan, ...	76,700	73,700	—3,000
Donegal. ...	142,300	142,600	+ 300
Monaghan, ...	61,200	59,300	—1,900
Total Ulster (part of)	280,200	275,600	—4,600
TOTAL POPULATION, ...	2.968,400	2,989,700	+21,300

The following article ("Irish Press" 23/10/'40) is of sufficient interest to warrant re-publication here :—

"First Population Rise since Famine.

War Homecoming of Our Exiles.

(Irish Press Special).

The Irish are coming home.

Gradually, but surely, in recent months a change from outflow to influx has appeared in the figures for the movement of our people overseas. Now the numbers of refugees piling in at our ports are being translated into the cold statistics of travel by the Department of Industry and Commerce.

And, for the first time in generations, the numbers coming in are greater than those going out. For the first time since the Great Dispersion that began after 1845-48, the natural increase of the nation is asserting itself, with the emigrant ship no longer carrying off our youth. It is, perhaps, a moment of our history that will be remembered.

As to figures, here are some comparisons.

From 1935 to 1937 inclusive, 2,491,510 people left the Twenty-Six Counties. And in the same period 2,428,557 came in, leaving us with a loss of 62,953 from our population.

The figures of the period year by year were as follows :—

Year.	Out.	In.
1935.	448.465	434,120
1936.	502,568	481,029
1937.	548,940	523,004
1938.	551,729	534,174
1939.	439.808	456,230

It will be seen, therefore, that only in 1939 was the influx greater. In that year, the year of the outbreak of the European war, 16,422 came home.

But again the trend became outward in the first months of the present year. A goodly number, it is presumed, represented migratory labour, which is seasonable.

Many of those going may have undertaken factory work which received an impetus in Britain owing to the war.

From January to June of this year the trend again became outward. Here are the figures :—

Month.	Out.	In.
January,	14,269	6,411
February,	9,096	5,654
March,	13,566	10,366
April,	14,271	8,308
May,	11,932	12,667
June,	8,153	6,823

For the June figure it will be recalled that 1,585 persons left for America from Galway, while another 1,605 left Galway for the States in July.

The trend inward really begun in mid-year of 1940.

Telling Figures of last Quarter.

But the most telling figures are those for the months of July, August and September. They are :—

Month.	Out.	In.
July,	5,309	7,596

(The out figure includes the 1,605 Americans from Galway).

August	4,191	6,500
September,	2,826	7,451

This trend inwards will be even greater when the figures for this month are given, it is believed. Should they continue, Ireland's next population census will be a welcome surprise.

The population figures published in June of the years 1938-40 are :—

1938	2,937,000
1939	2,934,000
1940	2,958,000

Since 1939, the trend of travel "to places outside Europe" has ceased, except for the groups who travelled on the American ships from Galway. In the 1940 period only two persons are recorded as travelling inwards from "places outside Europe."

They are the two officials who came to make arrangements for the American special repatriation ship. And they are included in the figures of those who went out again.

VITAL STATISTICS.

1. Population,	142,600
2. Number of Births,	2,710
Rate per 1,000 of the Population,	19.0
3. Number of Marriages.	716
Rate per 1,000 of the Population,	5.0
4. Number of Deaths from all causes,	2.129
Rate per 1,000 of the Population,	14.9
5. Number of Deaths from Tuberculosis (all forms),	159
Rate per 1,000 of the Population,	1.1
6. Number of Deaths from Pulmonary Tuberculosis,	111
Rate per 1,000 of the Population,	0.8
7. Number of Deaths from other forms of Tuberculosis,	48
Rate per 1,000 of the Population,	0.3
8. Number of Deaths from Influenza,	145
Rate per 1,000 of the Population,	1.0
9. Number of Deaths from Cancer,	161
Rate per 1,000 of the Population,	1.1
10. Number of Deaths of Infants under 1 year,	138
Rate per 1,000 Births.	51
11. Number of Deaths from Principal Epidemic Diseases *	13
Rate per 1,000 of the Population,	0.1
12. Number of Deaths from Diarrhoea and Enteritis in Children under 2 years of age,	4
13. Number of Successful Primary Vaccinations,	2,009
14. Number of Deaths from Puerperal Sepsis,	—
15. Number of Deaths from other Puerperal Conditions,	6
Rate per 1,000 Births,	2.2
16. Uncertified Deaths,	662
Percentage of total Deaths,	30.9
17. Number of Deaths of persons over 65 years.	1.282
Percentage of total Deaths.	61.9

(Death Rates are calculated on the population figures according to the Census of 1936 revised).

* Principal Epidemic Diseases :—Enteric Fever, typhus, small-pox scarlet fever, whooping cough, diphtheria, dysentery and diarrhoeal diseases

NOTIFIABLE DISEASES.

Public Health (Infectious Diseases) Regulations, 1941.

These comprehensive regulations came into force on **1st July, 1941.** They have the effect of revoking the Public Health (Infectious Diseases) Regulations 1929, and they include the diseases to which the Infectious Diseases (Notification) Act, 1889, applies. The following is, therefore, a list of the infectious diseases now compulsorily notifiable : Smallpox, cholera, diphtheria, membraneous croup, typhoid or enteric fever, erysipelas, scarlet fever, typhus, relapsing, continued or puerperal fever, cerebro-spinal fever, dysentery, encephalitis lethargica, malaria. measles, ophthalmia neonatorum, pemphigus neonatorum, pneumonia (acute influenzal), pneumonia (acute primary), poliomyelitis (acute anterior), puerperal pyrexia, trachoma, undulant fever, whooping cough.

The Regulations further make provision for the compulsory delousing and segregation of typhus patients and contacts, for the control of carriers of Typhoid Fever, Diphtheria and Dysentery, and for restrictions on the sale of milk likely to cause the spread of Scarlet Fever.

These Regulations are important insofar as they extend the list of notifiable diseases, and give the Public Health Authorities amplified powers in dealing with carriers of dangerous epidemic infections.

The oustanding significance of healthy and convalescent carriers in the spread of infectious disease is now better understood by the general public, and on their co-operation must depend the successful control of these maladies.

Provision is also made in the Regulations for the control and treatment of cases of Malaria.

INFECTIOUS DISEASE NOTIFICATIONS 1941—COUNTY DONEGAL

Dispensary District.	Tuberculosis.	Enteric Fever.	Diphtheria.	Scarlet Fever	Puerperal Fever.	Measles.	Primary Pneumonia	Influenzal Pneumonia	Whooping Cough.	Acute Anterior Poliomyelitis.	Ophthalmia Neonatorum.	Cerebro Spinal Meningitis.	Erysipelas.
Ardara, ...	5	—	—	—	—	—	1	—	—	—	—	—	—
Ballintra, ...	3	—	—	—	—	—	—	—	—	—	—	—	—
Ballyshannon, ...	5	—	—	1	—	—	—	—	—	—	—	—	—
Buncrana, ...	5	7	—	1	—	—	—	—	—	1	—	—	—
Carndonagh, ...	—	—	2	—	—	—	—	—	4	—	—	—	—
Carrick, ...	5	2	—	—	—	—	1	5	—	—	—	—	—
Castlefin, ...	3	—	—	—	—	—	—	—	—	1	—	—	—
Churchill, ...	1	—	—	—	—	—	—	—	—	—	—	—	—
Cloghan, ...	5	—	—	10	—	—	—	2	—	—	—	—	—
Clonmany, ...	3	—	1	—	—	—	2	2	—	—	—	—	—
Cross Roads (Falcarragh), ...	4	—	—	1	—	—	—	—	—	—	—	—	—
Cross Roads (Bunbeg), ...	3	—	—	4	—	—	—	—	—	—	—	—	—
Donegal, ...	2	—	—	1	—	—	—	—	—	—	—	—	—
Doochary, ...	4	—	3	2	—	—	—	—	—	—	—	—	—
Dunfanaghy, ...	—	—	1	1	—	—	1	—	—	—	—	—	—
Dungloe, ...	7	—	—	—	—	—	1	—	—	—	—	—	—
Dungloe (Burtonport), ...	5	—	—	9	—	1	—	—	—	—	—	—	—
Dungloe (Arranmore), ...	3	—	—	—	—	—	—	—	—	—	—	—	—
Dunkineely, ...	2	—	—	—	—	—	—	—	—	—	—	—	—
Fanad, ...	2	—	—	2	—	—	—	—	—	—	—	—	—

Dispensary District.	Tuberculosis.	Enteric Fever.	Diphtheria.	Scarlet Fever	Puerperal Fever.	Measles.	Primary Pneumonia	Influenzal Pneumonia	Whooping Cough.	Acute Anterior Poliomyelitis.	Ophthalmia Neonatorum.	Cerebro Spinal Meningitis.	Erysipelas.
Glenties, ...	2	—	—	—	—	—	—	—	—	—	—	—	—
Kilderry, ...	3	—	—	16	—	—	—	—	14	—	—	—	1
Killea, ...	3	—	1	—	2	—	1	2	—	—	—	—	2
Killybegs, ...	5	—	—	—	—	—	1	5	9	—	—	—	1
Killygordon, ...	7	—	—	9	1	—	2	—	—	—	—	—	—
Kilmacrenan & Milford, ...	—	—	3	—	—	—	—	—	—	—	—	—	—
Laghey, ...	—	—	—	—	—	—	—	—	—	—	—	—	—
Letterkenny, ...	2	—	2	17	—	—	—	—	—	—	—	—	—
Malin, ...	1	—	1	—	—	—	—	—	—	—	—	—	1
Manorcunningham, ...	1	—	—	—	—	—	—	—	—	—	—	1	—
Moville, ...	8	—	7	1	—	—	4	—	—	—	—	—	—
Pettigo, ...	3	—	—	—	—	—	—	—	—	—	—	—	—
Ramelton, ...	—	—	—	—	—	—	—	—	—	—	—	—	—
Raphoe, ...	2	—	7	—	—	—	—	—	—	—	—	—	—
Rathmullan, ...	—	1	—	—	—	—	—	—	—	—	—	—	—
Rosguill, ...	5	—	1	—	—	—	—	—	—	—	—	—	—
Stranorlar, ...	9	4	—	2	—	1	—	—	—	4	1	—	—
Tanatallon, ...	7	1	—	2	—	—	2	1	—	—	—	—	—
TOTAL, ...	125	15	29	79	3	2	16	17	27	6	1	1	5

DIPHTHERIA.

The total number notified was 29—exactly the same as last year. The following table sets out the facts as regards immunisation in these 29 cases :—

Year 1941.	Immunised.	Not Immunised.
Total No. of cases, ...	2	27
Total No. of deaths ...	nil.	4

As was noted in last year's report, no deaths occurred in the (two) immunised cases. The mortality in the non-immunised was 15.4 per cent. These small series of figures bear out the findings of larger and more statistically significant figures that deaths from diphtheria in immunised children are of very rare occurrence.

The following table demonstrates the age incidence of the disease :

AGE INCIDENCE OF DIPHTHERIA.

Age.	No. of Cases.	Deaths.
0—1	2	1
1—3	2	-
3—5	5	2
5—10	8	1
10—15	5	-
15—20	4	-
20—30	2	-
30—	1	-

It will be noted that the four deaths occurred in the children aged 0—10 years. None of these four had been immunised against the disease.

TABLE SHOWING NUMBER OF CASES OF DIPHTHERIA NOTIFIED AND NUMBER OF DEATHS FOR EACH OF THE YEARS 1930 TO 1941 (COUNTY DONEGAL).

Year.	No. of Cases Notified.	No. of Deaths.
1930	38	5
1931	23	7
1932	32	8
1933	80	7
1934	74	11
1935	70	8
1936	34	4
1937	80	8
1938	61	9
1939	55	5
1940	29	4
1941	29	4

The following is a summary of the outstanding facts of importance in the control of this disease :—

1. **Infectious Agent.** Bacillus diphtheriae (Klebs-Loeffler bacillus).

2. **Source of Infection.** Discharges from diphtheritic lesions of nose, throat, ear, conjunctiva, vagina, and wound surfaces. Secretions from the nose, throat and ears of carriers.

3. **Mode of Transmission.** By droplet spread, directly by personal contact, indirectly by articles freshly soiled with discharges, pencils and spoons or through infected milk or milk products.

4. **Incubation Period.** Usually 2 to 5 days, with limits of 1 to 7 days.

5. **Period of Communicability.** Until virulent bacilli have disappeared from the secretions and the lesions. The persistence of the bacilli after the lesions have healed is variable. In fully three-fourths of the cases they disappear within two weeks. In 95 per cent. of cases they disappear in 4 weeks. In exceptional cases virulent bacilli remain in the throat and discharges for many months.

6. **Methods of Control.**

(a) The infected individual and his environment :—

(1) **Recognition of the disease.** By clinical symptoms with confirmation by bacteriological examination of throat and nose or other site ; in doubtful cases the Schick test should be performed immediately. Serum given 4 to 6 hours later will not invalidate the test. If serum is given on first examination the Schick test is of no value.

(2) **Isolation.** Until there is no longer any sore throat, or any abnormal discharge from the throat, nose, ears, eyes or vagina, and no cutaneous pustulation and that at least two successive bacteriological examinations of the pharyngeal and nasal mucus for the specific bacillus made at an interval of not less than four days have been attended with negative results, each examination having been made not less than six hours after the discontinuance of local antiseptic application. If the organism persists after convalescence is established, virulence test should be performed.

A similar rule applies to every nurse who has been attending on a case of diphtheria, and a like procedure should be followed before she resumes her ordinary duties.

(3) **Immunisation.**

(4) **Quarantine.** None.

(5) **Concurrent disinfection.** All articles which have been in contact with the patient and all articles soiled by discharges from the patient.

(6) **Terminal disinfection.** At the end of the illness through airing and sunning of the sick room with cleaning or renovation.

(7) **Investigation of source.** Clinical examination for missed cases and for those with some unhealthy condition of the nose, throat or ears. Such cases should be Schick tested and swabbed for the presence of **virulent** diphtheria bacilli. If the organism is found to be non-virulent on two successive occasions the carrier is innocuous.

(b) General Measures :—

(1) Schick testing and active immunisation of all susceptibles.

7. The pupil may return to school in four weeks, provided that convalescence is completed, that there is no longer any sore throat, or any abnormal discharge from the throat, nose, ears, eyes, or vagina, no cutaneous pustulation, and that at least two successive bacteriological examinations of the pharyngeal and nasal mucus for the specific bacillus have given negative results, each examination having been made not less than six hours after the discontinuance of local antiseptic applications.

SCARLET FEVER.

There were 79 cases (as against 67 in 1940), with four deaths. This, of course, does not represent the true mortality, as many cases are not notified nor recognised. Still it is important to note that there were as many deaths in the County from Scarlet Fever as from Diphtheria, thus emphasizing the caution given in last year's report that this is a treacherous disease not to be taken lightly, in spite of the mild nature of the malady in many cases.

TYPHOID FEVER (Enteric).

Year.	No. of Cases.	No. of Deaths.
1930	75	10
1931	51	5
1932	24	4
1933	46	9
1934	39	2
1935	42	1
1936	10	2
1937	102	16
1938	21	1
1939	13	1
1940	10	1
1941	15	—

The number of notified cases was fifteen. There were no deaths in these fifteen cases. The incidence over the twelve month period is shown in the following table :

January	—	2 cases.
March	—	1 case.
May	—	1 case.
June	—	1 case.
July	—	2 cases.
August	—	6 cases (4 in one family).
September	—	1 case.
November	—	1 case.

It will be noted that the cases kept cropping up in scattered small groups, evenly spread out over the entire year. This is characteristic of endemic typhoid, and is, without doubt, due to the presence of unrecognised carriers in the areas affected. Some of these carriers may indeed have had a mild attack of the disease originally, and may have never even been diagnosed. As mentioned in previous reports every endeavour is made to trace the origin of each outbreak, but in many instances this is a task of extreme difficulty, and the origin remains obscure. In the majority of cases it would tax the proverbial skill of Sherlock Holmes to unravel the many connecting links required to ensure a successful search for the infecting, and indeed often unwitting, human agent.

In case 1 there was strong suspicion of a carrier, but owing to lack of corroboration this could not be definitely ascertained. The victim was a stranger to the district staying in an isolated cottage, which had a piped water-supply — the latter for washing purposes only. It is surmised that some of this water may have been used for drinking purposes owing to some error. The stream supplying the water runs past the rear of several dwelling-houses, and could easily be contaminated.

Case 2. The source of the infection could not be traced, but sporadic cases of typhoid occur regularly in the area. The patient was a boy of 11 years who took a "cold in his chest" which lasted about three weeks — nothing unusual noticed apart from the cold. When he got up to go to school he complained of not feeling well. His legs were weak, he had a vague pain in the abdomen, he vomited once or twice that day and could eat nothing. His temperature was found to be 101 F., pulse 98. Next day he was sent to hospital as a possible case of typhoid. This was confirmed by blood examination (Widal).

Case 3. The mother of this boy had been nursing her son. Through some error, she was not inoculated at the same time as the other contacts, and later developed the disease. She was very ill at one stage but made a good recovery.

Of the other cases, one was suspected to be due to eating infected shell-fish, one was definitely infected in the house of a known carrier (previously responsible for three other cases), while another was caused by an undiagnosed case of typhoid. This latter woman was found on examination to be a "carrier", and as the "carrier" condition persisted after several weeks in hospital, she was allowed to go home. Before leaving the hospital she was advised of the precautions she should take, and a typed copy of the following instructions was handed to her :—

(It was unfortunate that some four or five persons were infected from this one patient before the true nature of the disease was suspected).

"Carriers", that is persons who, though in good health, are excreting bacteria in the bowel and kidney discharges should be scrupulously clean in their person and clothing, and especially their hands, and should not be employed in handling or preparing food. Their excreta should be disinfected, and should be kept at a safe distance from the water-supply. Carriers should not engage in dairy work, and as unwitting carriers may infect milk, **all** those who are employed in milking or in the preparation or distribution of milk should be particularly careful and clean in person and habits. If any such are found to be carriers, they should immediately cease to take part in any work of this kind involving the handling of foodstuffs.

Female Carrier.

The treatment of carriers is difficult and unsatisfactory. The best course is to make the "carrier" understand clearly in what way she is a danger to her friends and neighbours. Personal hygiene and care in the disposal of faeces, urine and personal linen are of the utmost importance. (All her soiled linen should be boiled or disinfected immediately and should not be sent to a laundry). Towels should be strictly reserved for her own use. No carrier should engage in the preparation or distribution of milk or other food.

Preventive inoculation of contacts helps to protect them against the disease.

Individuals who recover from typhoid may continue to harbour the bacillus for months or years. Those retaining the bacilli up to the third month after convalescence are spoken of as convalescent or temporary carriers, and about 5 per cent. of typhoid patients become temporary carriers. After this period of time any that still harbour the bacillus are known as chronic carriers. About 2 per cent. of typhoid patients become chronic intestinal carriers, a smaller number urinary carriers. In both, the discharge of bacilli may be intermittent. Some suffer from periodic disturbances of the gall-bladder, bowel or urinary tract, but many are symptomless 'Healthy carriers' is the term used to designate those who are not **known** to have suffered from typhoid but are capable of infecting others. A well known case of a carrier is that of "typhoid Mary", a cook who had lived in service in seven families during a period of years. In each family typhoid fever occurred, and twenty-eight cases in all were traced to her."

Age and Sex-Distribution of Chronic Typhoid Carriers.

The Health Department of New York State has for many years had a system of control and ascertainment of typhoid carriers which has given them great experience in dealing with such potentially dangerous individuals. In New York, as in other places, the high proportion of elderly women among carriers has been noted, and some doubt was felt as to whether this could be ascribed to a specific susceptibility or whether it might not be due to the fact that the female's association with cookery and midwifery rendered her more likely to be detected during the investigation of other cases. It might also be the result of a much higher incidence of typhoid at the time when they were young. These questions were investigated by Dr. Ames of the New York Health Department and he came to the following conclusions : In both sexes the probability of becoming a carrier increases with age. A female is nearly twice as likely as a male to harbour the infection after recovery, and the probability is relatively greater after forty years of age. The age distribution of known carriers is therefore not entirely a consequence of the falling incidence of the disease, nor is the preponderance of female carriers due to accidents of detection. Incidentally, in New York State typhoid is less common in females at practically every age than in males.

TYPHUS FEVER.

No cases of this disease were reported during 1941. Cases occurred, however, in three other counties, and a watchful eye will need to be kept by Public Health authorities on all vagrants especially those suffering from pyrexial diseases.

As noted last year, the following symptoms are observed in the early stages of the disease :—Shivering, headache, fever, general malaise. Pulmonary manifestations in the form of **bronchitis and** sometimes of **pneumonia** are very liable to give rise to errors in diagnosis.

A fever lasting two weeks accompanied by persistent headache has been found the most characteristic clinical picture at the onset of an epidemic. In all doubtful cases, a sample of the blood should be taken for the Weil-Felix test.

TABLE SHOWING ANNUAL INCIDENCE AND MORTALITY FOR YEARS 1930 TO 1941.

Year.	No. of Cases.	No. of Deaths.
1930	1	—
1931	2	1
1932	—	—
1933	—	—
1934	—	—
1935	—	—
1936	—	—
1937	—	—
1938	—	—
1939	—	—
1940	12	1
1941	—	—

The British Ministry of Health have recently issued a memorandum to all doctors in England outlining some important points in connection with the disease :—The patient should be enveloped in a large sheet and removed to hospital in a vehicle easy to free from lice. The greatest care should be taken to protect the staff admitting the patient, who should be taken to a special bath-room, stripped, de-loused and clad in hospital garments by protected attendants before being admitted to the special ward.

Louse-borne typhus fever is an acute infectious disease lasting twelve to sixteen days. Toxaemia and nervous symptoms are pronounced. The characteristic maculo-papular rash appears on the fourth or fifth day, **never involves the face,** and may become haemorrhagic. The onset of the disease is sudden, and common initial symptoms are rigors, headache, pains in limb and back, vomiting and bleeding from the nose. According to Dr. Mackenzie, two constant symptoms at the onset are headache and bronchitis. Delirium sets in early.

It is thought that the excreta as well as the blood are infective. By about the end of the first week, the patient's blood-serum will agglutinate the so-called B. Proteus strains (Weil-Felix reaction). At a recent discussion, Dr. Findlay said that the rickettsia virus could be isolated by inoculating the patient's blood into guinea-pigs and rats. It was possible to obtain rickettsia in this way after the first week and not only during it. The sulphonamide drugs are said to be without effect on human typhus.

BRUCELLOSIS.

No cases reported during 1941.

INFLUENZA.

There were 145 deaths as compared with 91 last year. This was a large increase in the mortality for which no adequate explanation can be offered, except perhaps increased virulence of the infection. The danger in most cases arises from the onset of a fatal pneumonia, hence the urgent necessity of taking all precautions when the early symptoms manifest themselves in an epidemic period.

This was emphasized particularly in 1939 Report, when the following precautions were advised :—

Ventilation. Well ventilated airy rooms promote physical well-being, and fresh air dilutes and dissipates infective material.

Gargles. Gargling has been recommended as a preventive measure though its importance has been over-rated. It may be employed with advantage after exposure to infection in a crowd or close contact with an infected person.

Face Masks. The public are not advised to make use of face-masks. By hindering the free circulation of air through the nasal passages they cause congestion of the mucous membrane and thus may induce greater liability to attack. Temporary use of surgical masks by those attending on the sick may, however, be occasionally desirable.

Vaccines. There is no direct evidence, so far, that vaccines protect against the disease.

Protection by Drugs. No drug has been proved to have any specific influence in the prevention of influenza.

Needless Exposure. It is evident that during influenza prevalence, the risks of contracting the disease may be diminished appreciably by abstaining, wherever possible, from attendance at social or other gatherings at which a large number of persons are to be present.

Precautions When Attacked.

At the first feeling of illness the patient **should go to bed in a room by himself, keep warm and seek medical treatment.** The doctor, if called immediately, is afforded the opportunity of giving advice or treatment which may ward off the more dangerous complications. Relapses and complications are much less likely to occur if the patient goes to bed at once and remains there for two or three days after his temperature is normal ; much harm may be done by getting up too early.

The secretions of the patient are most infectious in the early stages, but isolation should be maintained until the temperature has been normal for 24 hours.

The liability of nurses to infection may be diminished by adequate ventilation of the patient's bedroom, and by avoiding inhalation of his breath, particularly when he is coughing, sneezing or talking. The risk of conveyance of infection by the fingers must be constantly guarded against, and the hands should be washed at once after contact with the patient or his secretions.

The virus of influenza is easily destroyed, and extensive measures of disinfection are not called for. The spit should be received in a suitable receptacle in which is a solution of chloride of lime or other disinfectant. Discarded handkerchiefs should be immediately placed in disinfectant or, if paper or rag, burnt.

The patient should be fully recovered before returning to work.

Disinfection.

The routine disinfection of premises and articles after use by influenza patients is not called for, but a thorough washing and cleansing of rooms and their contents, and of washable articles, bedding or apparel is desirable. The practice of spraying halls and places of public resort with a disinfectant fluid is of doubtful utility.

TABLE SHOWING ANNUAL MORTALITY FROM INFLUENZA FOR YEARS 1937 TO 1941 (INCLUSIVE).

Year.	No. of Deaths.
1937	219
1938	73
1939	86
1940	91
1941	145

EPIDEMIC DIARRHOEA.

Four deaths reported.

The principal points to stress in the prevention of this fatal malady are the necessity for absolute cleanliness in the preparation of food and food utensils, and the insistence on breast feeding in every case, unless medically contra-indicated. It is now generally admitted that breast-feeding is **the** great prophylactic agent against infantile cholera. It is probable also that good milk plays a very important part in the prevention of the common infantile diarrhoeas. Milk from badly-nourished cows may provoke intestinal upsets in children. On replacing such milk by a more satisfactory product, the trouble will disappear in many cases.

The dangers to infant health arising from lack of breast-milk have been repeatedly stressed in these reports. If only from this viewpoint alone, the communal rearing of children away from their homes, as advocated in some countries, is unnatural and not in their best interests.

It is important to realise that these intestinal infections in infants are best ameliorated, and even prevented, by general measures of hygiene. Every procedure, such as the artificial feeding with non-maternal milk, which offends against natural physiological considerations, is bound to have a bad effect on the tender digestion of young infants. Furthermore the mother's milk contains certain ingredients of supreme importance for the child, which are, at best, imperfectly supplied in artificial substitutions.

In many cases of severe infantile diarrhoea the origin is not primarily in the digestive system at all, and one must always be on the look-out for some specific fever such as diphtheria or enteric. Nevertheless, the collapse arising from the intestinal upset is of primary importance and requires energetic and skilled treatment of the intestinal tract, in addition to any specific measures against a known infection. Modern treatment in hospital has reduced the mortality to a surprising degree in these cases. A further argument for skilled hospital treatment in these cases is the frequency with which middle-ear infections arise during the course of such a toxic upset. In some cases, indeed, the otitis is probably the primary factor leading to the presenting symptom of severe diarrhoea. In all such conditions, therefore, the middle ear should be an object of special attention even in the absence of any appertaining signs or symptoms.

TUBERCULOSIS.

CLINICS AND ATTENDANCES.

Clinics for the diagnosis, treatment and prevention of tuberculosis are held as follows :

Each fortnight—At Letterkenny, Carndonagh. Donegal and Glenties.

Each month—At Dunkineely, Carrick, Ardara. Dungloe, Pettigo, Ballyshannon, Milford, Tamney, Carrigart, Buncrana, Clonmany, Muff, Moville, Stranorlar, Raphoe, Lifford, Dunfanaghy, Falcarragh, Bunbeg, and Frosses.

Arranmore Island is visited as required by the local Medical Officer. In addition suspected cases are visited in their own homes at the request of their own doctor, or of any other responsible person interested, provided the dispensary doctor is agreeable.

ATTENDANCE AT CLINICS.

January,	71	February,	104
March,	116	April,	89
May,	103	June,	121
July,	114	August	86
September,	78	October,	75
November,	79	December,	56

As mentioned last year, the examination of contacts is urged on all patients. Those contacts who are found to exhibit any clinical signs of disease are immediately x-rayed, and if necessary sent away for treatment. All contacts are kept under observation for varying periods of from six months to a year, and are periodically overhauled in order to detect any suspicious signs of disease.

The notification of a case of tuberculosis automatically gives rise to the following questions :—

(1) Where did the patient get his infection ?
(2) What is the state of health of his family and immediate contacts ?

It is, of course, very important to try and obtain the answer to question (1) above as other healthy people may be unwittingly in close contact with a dangerously infective person. It is often difficult to convince parents and relatives that tuberculosis must come from infection with the tubercle bacillus. The commonest cause of such infection is contact with a case of pulmonary tuberculosis who is coughing and spitting up tubercle bacilli, frequently in enormous numbers. Such a person may be totally unaware of his dangerous condition.

An arrangement has been made by the Board of Health whereby patients from the south of the County may be x-rayed by Dr. Daly in the Sheil Hospital, Ballyshannon, and those from the North by Dr. McGinley in Letterkenny Hospital. Both doctors have been working under the scheme during the year, and have given every satisfaction. They have been very co-operative in regard to convenience of patients, and the standard of their x-ray work has been good.

The following table gives the annual notification of all forms of tuberculosis in County Donegal, together with the separate figures for deaths from pulmonary and non-pulmonary forms :—

Year	Notifications.	DEATHS REGISTERED		
		Pulmonary.	Other Forms.	Total.
1930	246	151	45	196
1931	150	122	35	157
1932	98	111	43	154
1933	89	120	30	150
1934	91	103	38	141
1935	80	106	36	142
1936	75	107	20	127
1937	59	93	35	128
1938	65	100	34	134
1939	73	101	27	128
1940	80	108	39	147
1941	125	111	48	159

The total number of deaths as notified by the Registrar-General was 159. (Pulmonary 111, Non-pulmonary 48. In spite of the fact that there are thirty-five district nurses in the County, all doing domiciliary tuberculosis visiting, painstaking inquiry from this department succeeded in tracing only 70 deaths. Of these, 22 had occurred in patients not notified to us at any time. While we have been able to investigate the twenty-two unnotified deaths (discovered by inquiry from the district nurses), we have no information regarding the 89 deaths represented by the difference between our figures and those of the Registrar-General. Without notification of **all** cases to the Health Department, it is inconceivable that the disease can be eradicated or even reduced to measurable proportions within any reasonable period of time. When a case of the disease is notified, the circumstances are investigated, the contacts examined, and any necessary advice or assistance rendered. Any of the contacts who may have contracted the disease are offered treatment, and in this way an effort is made to prevent further spread of the malady.

In view of the fact that so very many deaths occur in persons of whom this Department has no cognizance whatever, it would appear an urgent public health provision that some arrangement be made by the Registrar-General's department so that County Medical Officers of Health are notified of every death from tuberculosis in their respective counties at as early a date as possible.

The following table gives some of the relevant data concerning the 125 cases discovered during 1941. Of these, twenty-five had not been notified. These include the twenty-two unnotified deaths already mentioned.

TUBERCULOSIS CASES NOTIFIED, 1941.

Total number of cases, ...	125.
Deaths, ...	70.
Sputum-positive, ...	23.
Sputum-negative, ...	8.

	Pulmonary.	Non-Pulmonary.
Males,	38	10
Females,	60	17

Age.	M.	F.	Pulmonary.	Non-Pulmonary.
1—5	2	1	1	2
5—10	4	7	5	6
10—15	6	6	8	4
15—20	3	18	16	5
20—25	8	15	21	2
25—30	6	14	19	1
30—35	5	6	10	1
35—40	3	5	6	2
40—45	2	1	2	1
45—50	2	3	3	2
50—60	5	—	4	1
60—	2	1	3	—
			98	27

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(Scheme for the treatment of Tuberculosis).

DONEGAL COUNTY.

Return of number of patients treated under the County Tuberculosis Scheme during the year ended 31st. December, 1941.

	Pulmonary Tuberculosis			Non-Pulmonary Tuberculosis			Total
	Children under 15 Years	Other Persons		Children under 15 years	Other Persons		
		Males	Females		Males	Females	
1. **Insured Patients.**							
(i) No remaining under treatment :—							
(a) On 1st January, 1941.	—	10	12	—	1	1	24
(b) On 31st December, 1941.	—	8	15	—	1	3	27
(ii) No. of new patients treated during year 1941.	—	2	8	—	—	1	11
(iii) No. of cases under observation at close of year 1941.	2	—	3	—	—	—	5
2. **Other Patients.**							
(i) No. remaining under treatment :—							
(a) On 1st January, 1941.	28	70	103	55	19	18	293
(b) On 31st December, 1941.	39	86	133	56	21	29	364
(ii) No. of new patients treated during year 1941.	15	36	50	14	4	10	129
(iii) No. of cases under observation at close of year 1941.	59	2	—	—	4	—	65

III. No. of patients who received treatment during the year in
(a) Institutions under the control of the Local Authority, 147

(b) Extern Institutions, 59
(See footnote).

Signed, M. S. BASTABAL.

Date, 6th March, 1942. Tuberculosis Officer.

This number, in addition to new patients, is to include patients formerly dealt with under the Scheme who have returned during the year 1941 and are not already reckoned under (i) (a).

The sum of the figures in lines (i) (a) and (ii) should give the total number of patients of each class dealt with during the year.

Observation cases are not to be included in any of the figures relating to numbers of patients treated until a definite diagnosis of Tuberculosis shall have been made.

As to part III. above :

Note—If a patient was admitted more than once during the year to an Institution the case should be counted only once.

NOTE—Patients treated in local as well as in extern institutions are given under the heading of "Extern" only. Patients treated in more than one extern hospital are counted once only. Patientst reated in more than one local hospital or admitted twice to the same local hospital, are counted once only.

The accompanying table shows the admissions to and the discharges from the various local and extern institutions during the year :—

NAME OF INSTITUTION.	Admissions.	Discharges or Deaths	No. remaining on 31/12/'41
Donegal District Hospital, ...	39	43	14
Glenties District Hospital, ...	36	34	15
Carndonagh District Hospital, ...	36	36	14
Letterkenny District Hospital, ...	—	—	—
Lifford District Hospital, ...	16	17	1
Cappagh Open-Air Hospital, ...	5	4	4
Coole Open-Air Hospital, ...	2	—	4
Peamount Sanatorium, ...	17	13	18
Dr. Steevens' Hospital, ...	15	15	3
Newcastle Sanatorium, ...	3	3	1
Sheil Hospital, ...	1	1	—
	170	166	74

DOMICILIARY VISITS.

At the end of the year, there were thirty-five Jubilee and Dudley Nurses in the County, and they all visit the homes of the patients who are too ill to attend at the local clinics.

The total of visits paid by them during the year was divided as follows between the thirty-five districts :—

Annagry,	175
Ardara,	461
Arranmore,	308
Ballybofey & Stranorlar,	390
Ballyshannon,	95
Bruckless,	94
Buncrana,	416
Bundoran,	217
Carndonagh,	120
Carrigart,	179
Clonmany,	161
Convoy,	96
Derrybeg,	184
Donegal,	208
Doochary,	457
Drumholm,	421
Dunfanaghy,	352
Dungloe No. 1.,	236
Fahan and Inch,	124
Fanad No. 1.,	200
Fanad No. 2.,	206
Frosses,	200
Glencolumbkille,	248
Glenfinn,	52
Gortahork,	115
Kilcar,	260
Letterkenny,	358
Lifford, Clonleigh and Castlefin,	149
Malin,	188
Manorcunningham,	4
Moville,	318
Muff & Upper Moville,	234
Ramelton,	120
Rathmullan,	105
St. Johnston,	47

223 Domiciliary Visits were paid by the Superintendent Public Health Nurse in County Donegal to tuberculous patients during the year.

CONTAGIOUSNESS OF TUBERCULOSIS RECOGNISED.

The contagious nature of tuberculosis was recognised in early times. Herodotus (484-424 B.C.) stated that all persons suffering from scrofula and leprosy were isolated by the Persians. They were not allowed to have contact with other persons and were even removed from the towns. Isocrates (436-338 B.C.) was annoyed by his friends who feared for his life because he was associated intimately with a person who had consumption. Aristotle (384-322 B.C.) asked why close association with consumption leads to the contraction of the disease while this was not truc with such conditions as dropsy and apoplexy. His explanation was that in close contact with consumptives "one takes the disease because there is in this air something disease-producing." Galen (131-201 A.D.) said : "It is dangerous to live with consumptives . . . ". Ettmuller (1664-1683) looked upon the sputum as the medium carrying the contagion. Valsalva (1666-1723) and Morgagni (1682-1771) refrained from making postmortem examinations of those who died from tuberculosis because of fear of contracting the disease. In 1780 Wickmann of Hanover, said that this disease was transmitted when exposure to infection was frequent or long continued.

Numerous persons including scientists believed in spontaneous generation of lice and worms. They argued that ultimate particles of matter to form living things was not essentially different from their groupings to form less complex things like chemical compounds; in other words, whatever was present by way of disease could easily have generated spontaneously with no antecedent life. Thus, tuberculosis was thought by many to be a product of spontaneous generation. Pasteur proved beyond doubt that spontaneous generation is an impossibility but still many did not accept his evidence. While Pasteur was doing valuable scientific work, Villemin conducted experiments which proved that tuberculosis is a contagious and virulent disease. His announcement in 1865 was greeted with fierce criticism but the results of his experiments meant more to him than the personal opinions and whims of his contemporaries. In December, 1865, Villemin appeared before the French Academy of Medicine, and presented in detail the experiments he had recently performed and conclusions he had drawn from them. He had actually inoculated material from persons who had tuberculosis or who had died of it, into the bodies of small animals which in turn had developed the disease. He did this enough times to thoroughly convince himself that this material from the human body contained something which when transmitted to the animal caused the disease. Therefore, he concluded that tuberculosis is contagious. He said :

"Tuberculosis is the effect of a specific causal agent ; of a virus. This morbid agent ought to be found, like its congeners. in the morbid products which it has determined by its direct action on the normal elements of the affected tissues, introduced in an organism capable of being affected by it. This agent ought then to reproduce itself. and to reproduce at the same time the disease of which it is the essential principle and the determining cause." Again he said "Tuberculosis is a specific affection. Its cause resides in an inoculable agent. Tuberculosis belongs then to the class of virulent maladies, and ought to be placed in our nosological tables alongside of syphilis, but more nearly to glanders and farcy." Finally Villemin said : "The virus behaves like a parasite. It multiplies itself and by itself. We only furnish the means by which it lives and reproduces itself ; we never create it. This affection, like all its congeners, is not a spontaneous creation of the body. **Neither debility nor fatigue nor pain nor heat nor cold is able to make it break out in the body. To be born, a germ is necessary ; it can come only from the outside.** Its inoculability shows that this germ multiplies itself and perpetuates itself in the organic media cf man and animals."

Following the work of Villemin, Chauveau conducted experimental work on cattle. He purchased 4 healthy heifers from a mountainous area where tuberculosis among cattle was principally unknown. He then took tuberculosis matter from the lungs of an old cow, divided it finely in a mortar and diluted it with water. This material was placed in a bottle, the opening of which was introduced far back in the mouth so the animal was compelled to swallow the contents as he emptied it. Each of three heifers received approximately one ounce of tuberculous matter. The third was left as a control. There was no evidence of disease for a while ; then the three inoculated heifers began to appear thin and to cough ; they were ill. At the end of 53 days they were extensively diseased, while the control heifer was in perfect condition. He had given them such large doses that the disease which developed was overwhelming and generalised. This probably was the reason that they manifested the disease so soon. Thus Chauveau was convinced beyond all doubt that he had proved the transmissibility of tuberculosis from animal to animal of the same species.

Fleming (English, 1875) said that there appeared to be many facts to support the popular notion that the cohabitation of healthy with phthisical cattle will produce the malady in them and that the expectorated matters of the disease is probably the active agent in the contamination. He believed that even stalls in stables may become so contaminated by animals suffering from tuberculosis that they infect sound animals which later inhabit them.

Congenital tuberculosis among cattle is rare, probably never being greater than a fraction of 1 per cent. A case reported in 1934 shows the methods employed to procure this information concerning the nature of tuberculosis. Five days after birth a calf was found to react to the tuberculin test. The postmortem examination revealed the presence of generalised tuberculosis. This same method of investigation has been employed frequently since Tuberculin was presented by Koch in 1890.

Bang of Denmark and others have emphasized the fact that when calves of tuberculous cows are isolated from their mothers at birth and are kept free from further exposure to tubercle bacilli they remain healthy just as Grancher in France later found was true of tuberculous mothers.

That only a single brief exposure is sufficient to transmit the disease (in some cases) was definitely proved. In 1914 Schroeder showed that a single feeding of a calf from a tuberculous udder or artificially from a pail of milk from a tuberculous udder is sufficient to cause tuberculosis in the otherwise unexposed calves of healthy cows.

The fact was revealed that tuberculosis among cattle usually requires a long time to develop to a destructive and symptom-producing stage. Thus the infected calf nearly always reached maturity and often late adult life before the disease manifested itself. Many such infected calves lived through the span of life harbouring viable, virulent turbercle bacilli with no external manifestation of the disease. The older the animals became, the larger the number of the infected group which became spreaders of tubercle bacilli or were incapacitated with the disease. (This explains the greater incidence in dairy cattle than in beef cattle. The latter are slaughtered at an early age while dairy cattle are often permitted to live through the natural span of life, which is approximately 15 years).

Kaupp of Colorado in 1909 reported a good example of a cow which had won the grand championship of Holsteins at the St. Louis World Fair. She was later presented to the Colorado Agricultural College where she was tested with tuberculin twice a year. **She reacted each time** until near the last of her life. She was kept in quarantine instead of being slaughtered for two reasons : First, her calves were valuable ; second, for experimental purposes only. Only one of her calves contracted tuberculosis—at 4 years old. When she was 15 years old she was slaughtered as her usefulness had passed. Postmortem examination was done on the occasion of a short farmers' course, and the students of the College were present to witness the examination as they had observed the positive tuberculin reactions during her life. Tuberculosis was found in both lungs, the left adrenal gland and many lymph nodes. Thus man learned that any animal that reacts to the tuberculin test most likely has foci of living tubercle bacilli and at any moment of adult life may become a disseminator of the bacilli.

As early as 1901 Salmon said : "Tuberculosis is not preeminently a disease of poor, neglected, underfed, scrub cattle, for the better class of cattle have suffered perhaps to a greater degree."

Koch (Germany) examined under the microscope material which he obtained from areas of tuberculous disease ; he then applied dyes to colour the material, and saw a small micro-organism which was always in preponderance in this material. It had special staining qualities.

While the discovery of the tubercle bacillus proved of great value in determining with accuracy the diagnosis in some cattle and aided greatly in studying the transmissibility of the disease, it did not prove as valuable in the control of the disease as the veterinarians had anticipated. By the time the tubercle bacilli could be recovered from the excretions and secretions of animals the disease was in the advanced stage. Moreover it was already in the contagious stage. Although it was helpful to determine whether the animals had contagious disease, this determination was usually made after the bacilli had been spread to other animals and human beings.

However, the veterinarian's disappointment was soon to vanish for he was to have a method (Tuberculin) of detecting tuberculosis within a few weeks after the germs had entered the bodies of cattle and even while the diseased areas were microscopic in size.

In 1899 Stubbe, Chief Veterinary Inspector for the Department of Agriculture in Belgium, stated that an animal which gives a typical reaction to the tuberculin test is just as dangerous as one that is clinically affected, and consequently such animals should be disposed of with as little delay as possible.

Gilliland said in 1907 : "The tuberculin test after 15 years of use has come to be recognised as the only and best means of determining occult or hidden tuberculosis in cattle. Each day sees it grow more in favour as a means of diagnosing tuberculosis in man."

The International Commission of the American Veterinary Medical Association made the following statement in 1911 : "That the Commission recognises after careful study, that the tuberculin test is the fundamental factor in any policy having for its object the control of bovine tuberculosis."

Van Es said in 1924 : "In tuberculin a means has become available by which tuberculosis can be recognised with uncanny certainty in animals long before any physical evidence of the disease can manifest itself. It has become the pivot upon which the machinery of tuberculosis prevention and control turns."

Later Lochhead said : "The tuberculin test indicates that tuberculous infection is present ; it does not indicate how much or how badly, and it affords accurate diagnosis in 98 per cent of the tests. It misses some. Nothing in the world is 100 per cent. perfect, and no test used in medicine is perfect. The tuberculin test is nearer perfect than the Wassermann test for syphilis, the Widal test for typhoid, the throat swab for diphtheria or the sputum test for tuberculosis."

The tuberculin test consists of administering a tiny amount of tuberculin (obtained from tubercle bacilli) into the skin. One of the tail folds is commonly selected as an accessible place to administer and observe the intradermal test.

The intradermal method enables one operator to test a large number of cattle without regard to age and without confining the animals for the greater part of the day, since the temperature-taking is eliminated. The time saved, together with the smaller dose of tuberculin, materially reduces the cost of testing. After the test is administered to cattle it is not observed for 72 hours. The test is repeated in 120 hours when necessary. Small shot-like nodules which occasionally develop at the point of administration are not read as reactions. The typical reaction consists of a characteristic swelling which appears at the site of the injection in from 12—24 hours, increasing in size for 2 or 3 days and then slowly disappears. The swellings range in size from that of a pea to that of an orange. They are dense and hard, or soft and doughy to the touch. In some cases they are sharply defined, while in others they are more diffuse. Occasionally the reaction is intense and results in sloughing of a small area of the skin.

About 1900, Pearson and his staff tested the 50,000 dairy cows shipped into Pennsylvania from other States and confirmed similar observations made in Europe that the tuberculin test, even though administered within 24 hours of the delivery of the calf, does not harm the cow or the calf in any way.

Although B C G and all other proposed methods of immunising cattle against tuberculosis have been given adequate trial in North America they were found wanting, and were completely discarded by the veterinary profession. After all, there have been numerous warnings by great minds against building up hopes of controlling tuberculosis through immunisation. For example attention was called early to the fact that an attack of tuberculosis does not immunise against subsequent attacks.

It is a disease which runs a chronic course with but little tendency to heal, although it is sometimes latent for a long period.

During the last half of the 17th Century, tuberculosis in animals was supposed to have some relation or even be identical with venereal disease in human beings. The people's fear of venereal infection at that time was so great, and the general aversion was such that official prohibition was demanded to prevent the sale of meat of tuberculous cattle. People even feared to touch the blood or the entrails of such animals, and the butcher's knife was thrown away with the worthless carcase and in many cases even the axe with which the animal was felled.

In 1716, a French butcher furnished meat from cattle in which the viscera contained tuberculous nodules and purulent tumours. He was fined £5,000, condemned to 9 years of exile, and prohibited permanently from engaging again in the same trade. In 1732, a penalty was imposed by law and even corporal punishment was meted out in Germany for anyone who sold the meat of tuberculous animals or evaded inspection.

France was the first of all nations to abolish private slaughter-houses in large and medium-sized cities and to introduce effective inspection of meats in municipal abattoirs (1810). This was later adopted in nearly all the cities in Europe.

In slaughter-houses it is common to hear the expressions "the animal is full of tuberculous deposits," yet these cattle are frequently in good condition as far as appearances go, since animals suffering from the disease may actually lay on fat and, unsuspected by the owner, propagate their malady at the same time by contact.

In South America where cattle were exceedingly numerous, but the use of milk almost unknown or used only after being boiled, the natives were found free from tuberculosis in 1890. Brush at this time reasoned that tuberculosis was originally deprived from the bovine species. He said that **wherever there was a race of people without cattle, phthisis was unknown,** and hence that if all the cattle in his country were to be killed, the disease would finally die out entirely from the human family. **He spoke of the cow as "the wet nurse of consumption."**

Several American authorities considered that the first step in fighting tuberculosis among human beings was the restriction of tuberculosis in cattle. Stalker and Nills of Iowa Agricultural College concluded in 1895 :

(1) "Tuberculosis of the lower animals is identical with human consumption.
(2) It is an infectious disease.
(3) The disease may be transmitted from man to the lower animals and from the lower animals to man.
(4) Tuberculosis causes more deaths in the human family than any other disease.
(5) Cows are especially susceptible to the disease, and are extensively affected by it.
(6) Milk from tuberculous cows may convey disease to the consumers.
(7) Milk from tuberculous cows having non-affected udders may convey the disease.
(8) The flesh of tuberculous animals may convey the disease.
(9) A large proportion of the cases cannot be recognised by clinical examination.
(10) No test yet discovered, other than that afforded by tuberculin, can detect any considerable proportion of cases in animals, and this test is practically infallible.
(11) Injection of tuberculin cannot produce tuberculosis, nor are the results harmful."

In 1899 Merilled of Chicago said : "It is, however, safe to predict that human tuberculosis will exist as long as bovine tuberculosis exists and 'vice versa', and that one can never be exterminated without the other."

BOVINE TUBERCULOSIS IN MAN.

Salmon (America) said in 1901 : "It is not my purpose to exaggerate in the least the danger from animal tuberculosis, but there has unfortunately been a tendency in recent years to make light of this danger Let us take facts as our guide, and not be unduly influenced by personal opinions. If it can be shown, as it has been, that animal tuberculosis may be communicated to man, then the presence of vast numbers of tuberculous animals in a country must be looked upon as a source of danger and one which it is our duty to do our utmost to abolish." Further he said : "To every citizen who possesses the finer feelings developed by civilisation, intelligence and cultivation, it must be a matter of some solicitude as to whether the steak which he eats for breakfast was cut from the carcase of a steer affected with generalised tuberculosis, or whether the milk which he drinks with his luncheon was produced by a cow having tuberculosis of the udder."

In 1908 Hughes said : "When one remembers the experiments of Mohler recently. in which he injected separator slime into guinea pigs, with the result that they became tuberculous ; and when one remembers the common infectiousness of skim milk and buttermilk, one's flesh begins to creep at the thought of the danger from this source of infection."

In 1914 Mitchell studied the cervical glands of 72 children who were treated surgically and found that 65 were due to the bovine type of tubercle bacillus. In eight adults, six were caused by the bovine type.

Tubercle Bacilli in Milk.

In 1902 the United States Bureau of Animal Industry reported the result of a study of milk from cows which reacted to tuberculin. Of 56 tuberculin reacting cows, 19.6% secreted milk which transmitted tuberculosis to one or more experimental animals when injected into the peritoneal cavity. In 1907 a study of sediment taken from cream separators of public creameries showed that 25% of the samples contained tubercle bacilli.

Van Es has stated that as many as 100,000 tubercle bacilli have been found in one centimetre of milk, and in some instances it was possible to prove its virulence when the original product was diluted one billion times. Many investigations have shown that cows without appreciable udder disease, but reacting to the tuberculin test, may yield milk containing tubercle bacilli.

In 1937 Griffith stated that in Great Britain 5 to 12 per cent. or more of the milk supply was infected with tubercle bacilli.

Other Dairy Products.

Tubercle bacilli may be present in all the products of milk, such as butter, cheese, whey and skim milk. Indeed Ravenal showed that they will remain alive in butter for approximately four months. In 1937 Mohler found tubercle bacilli were still alive and virulent in butter kept in cool storage for five months. Morganroth found tubercle bacilli in approximately one-half of the speciments of margarine he examined.

Lange states that the theory that a light bovine infection in childhood protects the individual from later infection is a dangerous one because no one can predict the outcome of even a slight infection in later years.

In 1937 Griffith pointed out that England's statistics compiled by

Eastwood and others, show that more than 50 per cent. of cervical gland tuberculosis at all ages and nearly 50 per cent. of the cases of lupus is of the bovine type. About 25 per cent. of the cases of tuberculous meningitis is due to the cattle type of tubercle bacillus, while 20 per cent. of the cases of tuberculosis of the bones and joints and genito-urinary tract is likewise.

In Scotland the incidence of bovine tuberculosis is even higher. In 1932 Griffith reported that in Great Britain from 1,321 cases of non-pulmonary tuberculosis in human beings, 35.3 per cent. were due to the bovine type of tubercle bacillus. The same year in England alone, it was estimated that about 6 per cent. of all deaths among humans from tuberculosis was caused by the bovine type of tubercle bacillus ; that about 2,000 deaths occur annually, and that at least 4,000 new cases of bovine tuberculosis develop each year in humans.

Among 1,040 cases of pulmonary tuberculosis examination revealed in 1932 that 2.3 per cent. were due to the bovine type of tubercle bacillus. In 1937 he reported a total of 163 such cases in Great Britain alone. The majority occurred before the age of 25 years. Griffith found it impossible to distinguish clinically or by x-ray examination between the human and the bovine type of pulmonary lesions in man.

Often those persons suffering from the bovine type of pulmonary tuberculosis have been in a great deal of contact with tuberculous cattle. For example among 29 persons with pulmonary tuberculosis who were closely associated with cattle, Cumming found only the bovine type of tubercle bacilli in the sputum of 13.

In Germany, Lange found that in 40 cases of pulmonary tuberculosis among stable-boys and milkers, 20 per cent. were due to the bovine type of tubercle bacillus.

Conclusion.

Recent observations have revealed that the bovine type of tubercle bacillus is capable of producing just as extensive and just as serious lesions in man as the human type.

Ravenal in 1901 called attention to the work of Marin and Woodhead, which showed that tubercle bacilli remained alive in the centre of a joint of meat over six pounds after the ordinary method of cooking. It was even shown that salt meats may contain living tubercle bacilli and therefore should be thoroughly cooked.

Mohler (1931) : "Scientists consider meat among the minor factors in the transmission of bovine tuberculosis to man. **The principal means of its transmission is the raw milk of tuberculous cows.**"

Pasteurisation is now a substitute for dairy hygiene but is only an additional safeguard against the spread of scarlet fever, typhoid fever, diphtheria, tuberculosis and brucellosis by milk. Van Es said in 1924 that pasteurisation must be looked upon as a makeshift measure ; the final solution of the tuberculosis phase of the milk problem is the eradication of the disease itself.

In 1937 Griffith (England) said : "Compulsory pasteurisation of all ordinary milk going into the larger towns will safeguard these urban dwellers against bovine tuberculosis and other milk-borne diseases, but will do nothing for the inhabitants of the rural and small urban areas. Until the milking herds are free from tuberculosis the people in these areas can protect themselves only by the home sterilization of milk, and more might be done by Health Authorities in preventing bovine tuberculosis by warning all mothers and prospective mothers, and all those in charge of schools, that ordinary raw milk is not safe from the risk of producing tuberculosis and should be boiled or pasteurised before use."

Pasteurisation became compulsory in New York in 1914, except for milk which was sold as certified. In August 1926 the Department of Health said: "Of even greater significance than the declining death-rate for non-pulmonary tuberculosis is the fact that the examination of tuberculous glands of the neck made in the year previous to pasteurisation revealed that in more than 50 per cent. the process was due to the bovine bacillus, whereas in only six of the 50 specimens obtained since pasteurisation has become general was the bovine bacillus found, and five out of these six cases were from out-of-town patients who had been fed on raw milk."

In 1935 Chadwick of Massachusetts stated that since 1910, when pasteurised milk first began to be used to any extent in Massachusetts, the rate from non-pulmonary forms of tuberculosis had dropped from 46 te 5 per 100,000.

DISCOVERY OF TUBERCLE BACILLUS.

Koch examined under the miscroscope material which he obtained from areas of tuberculous disease; he then applied the dyes and saw a small micro-organism which was always in preponderance in this material. It had special staining qualities. He next set out to grow it in pure culture in a special kind of medium in an incubator. He succeeded and the only remaining step was to introduce this germ which he had grown in pure culture into the bodies of animals to determine whether it would produce tuberculosis. He inoculated 278 guinea pigs, 105 rabbits, 82 mice, 19 rats, 13 cats, and a number of dogs, chickens and pigeons. The disease developed in so many of these animals that there could be no doubt that he had isolated the germ which has since been known as the tubercle bacillus or mycobacterium tuberculosis. He found these germs with such regularity in numerous areas of disease in man and in such materials as the sputum of consumptives that no doubt whatsoever could be left in the minds of persons who could read and understand his work. He demonstrated that in the sputum of healthy persons or those who were suffering from nontuberculous diseases of the lungs, the tubercle bacilli were never present. Thus, for the first time in all the centuries and less than sixty years ago the human eye actually visualized the germ which had caused so much destruction among people and their domestic animals since the beginning of recorded history. In 1901, Person stated that the tubercle bacillus is as strictly essential to the development of tuberculosis in cattle as a seed is for the development of a plant. Koch's work had been done so carefully and so completely that anyone qualified to repeat it could confirm it. He made his announcement of the discovery of the tubercle bacillus in 1882. Although Koch's discovery was of great importance, it was no more so than that of Villemin only slightly less than two decades before.

Accurate Diagnosis Made Possible.

The next eight years were the most encouraging period the veterinary profession had experienced since the establishment of its first school in 1762, just one hundred and twenty years prior to Koch's discovery as far as the control of tuberculosis among cattle is concerned. Up to this time the veterinarian could never be absolutely certain that an ill animal had tuberculosis during its life. He could see it wasting away but there were other diseases which caused similar wasting. He could examine the body by palpation and feel enlargements on the side of the neck, etc., but there were other diseases which caused such enlargements ; he could percuss over the animal's lungs and elicit abnormal notes but tuberculosis was not the only disease which caused such findings ; he could listen with the stethoscope and hear abnormal sounds but these could just as well be caused, and frequently were, by nontuberculous disease.

The science of pathology was well developed ; therefore, when the animal died the veterinarian could look directly at the areas of disease and usually (but not always) he could make a definite diagnosis of tuberculosis. Because of certain appearances of the areas of disease seen, various names were given. When tuberculosis developed on the surfaces of serous membrances, like the peritoneum and the pleura, round, smooth, pearly appearing prominences were often seen protruding from the surface ; thus, the Germans designated it "perlsucht" (pearl disease), while the English called it grape disease. According to the location of the disease, such terms as tuberculous meningitis, tuberculous pneumonia, tuberculous enteritis, pulmonary tuberculosis, etc., were used. Because of the appearance of the animal during the late stages of the disease it was called consumption, phthisis, pining, or wasting.

How Tuberculous Cattle Eliminate Tubercle Bacilli.

With a method of detecting the tubercle bacillus, the veterinarian could learn much about the disease during the life of the animal. Therefore, the period of the next eighty years was one of confirmation of Koch's discovery and the study of the disease in the living animal. Since Villemin had proved that tubercudosis is contagious and Koch had found the organism, the next question was, how does it spread from animal to animal ? They began to study the excretions and secretions of the living animals which were suspected of having tuberculosis. Since it was known that the sputum of tuberculous persons often contains bacilli, naturally the veterinarian looked to the excretions from the lungs of tuberculous cattle to contain them. While cattle with tuberculosis cough, they do not expectorate ; therefore, it was only that material which is ejected to the outside world through the mouth and nose by the force of cough that might cause the transmission of the disease to other animals directly from the tuberculous lung. Numerous studies were made of this material but it was difficult to collect. Ravenel developed an ingenious device as follows : An ordinary nose bag was equipped with a shelf of soft pine wood near the bottom so that the smallest particles ejected during cough were deposited on the wood. These were immediately transferred to a thin piece of glass and studied under the microscope. By this method Ravenel states that he was able to detect tubercle bacilli in the bronchial secretion of every tuberculous cow examined. This proved that when a tuberculous animal did cough into the watering or feeding trough or directly into the faces of other animals there was considerable danger of bacilli being deposited where they might soon be taken into their bodies. Moreover, if some of this material was not coughed out and remained in the mouth for a time, the tuberculous cow licking the udder could deposit tubercle bacilli which would fall into the milk pail during the act of milking or which would be taken into the digestive tract of the calf during the act of nursing. Cows have a habit of licking others and, particularly, their calves. Thus, tubercle bacilli from their tongues and mouth could be transmitted to other animals in this manner. Some experimenters not being able to obtain material ejected to the outside world during the act of coughing devised methods of collecting it from the throats of animals which was coughed from the lungs and before it was swallowed. They were successful in finding bacilli in this material.

Obviously since the cattle do not expectorate and not all of the material coughed from the lungs is ejected, much of it is swallowed. Therefore, the veterinarians suspected that one might find tubercle bacilli in the faeces. When they actually made examinations, the bacilli were found in abundance. Some animals had lesions in the digestive tract which eliminated bacilli into the faeces. In 1909 Calmette and Guerin conducted experiments on animals which proved that when tubercle bacilli are introduced into the blood stream, many are later found in the bile. This fact had a great practical importance because the intestinal contents of animals contained many bacilli which might be passed back into the body or eliminated to contaminate other animals as well as human beings. In 1921 Marchisotti naid that in tuberculous cattle the liver is often infected. This he thought should be classed as open tuberculosis because the bacilli pass by way of the bile into the intestinal tract. It was thought by some that the digestive juices would be sufficient to kill tubercle bacilli and those found in the faeces would be dead, but numerous careful experiments showed that this is not true; that is, the digestive juices do not have a sufficient bactericidal action and animal inoculation experiments revealed the fact that tubercle bacilli in the faeces of tuberculous cattle are not only viable but virulent. Thus, in the pasture large numbers of tubercle bacilli were eliminated from the bodies of tuberculous cattle through the faeces where cattle and other animals, such as horses, sheep, goats and particularly swine, become contaminated. In the stable when the cows are lying down the udder often becomes contaminated with particles of manure from the floor. When dry and during the act of milking, these particles drop into the pail or the nursing calf ingests them. Moreover, in cleaning the stables dried manure containing tubercle bacilli may become so finely divided that it contaminates the air; this is also true of fine sprays coughed from the animal's lungs. The contaminated air may be directly inhaled by uninfected cattle or the dust containing bacilli may settle to the feed troughs, the watering troughs, and elsewhere from which tubercle bacilli enter the bodies of cattle.

At first it was thought that the tuberculous cow would always discharge tubercle bacilli through the milk and what seemed to be very good evidence was the finding of tubercle bacilli in the milk of a high percentage of such cows. For a time the fact was overlooked that the bacilli might enter the pail from the dust and contamination on the outside of the udder, thus, the bacilli entered after the milk had actually left the udder. However, it was learned that cows which had definite areas of disease in the udder, even though they were so small that they could not be detected until the animal was slaughtered, did actually contain living, virulent, tubercle bacilli, and thus, their milk was contaminated before it left the udder.

Tuberculosis in cattle is not an uncommon disease in the uterus and other parts of the reproductive tract and the discharges from this disease through the vagina were often found to contain large numbers of tubercle bacilli.

Thus, observations and true scientific study had revealed that tuberculous cattle may discharge tubercle bacilli to the outside world through the mouth and nose, the intestinal tract, the reproductive tract, and the milk, all of which was extremely valuable information.

Fate of Tubercle Bacilli Discharged from Bodies of Cattle.

A point of great importance was what happens to the tubercle bacilli as they are discharged from the living tuberculous animal's body? To answer this question much scientific work was necessary. This revealed the fact that these germs do not grow and multiply outside the bodies of animals and human beings (except when placed in laboratory media). However, they are capable of remaining alive and retaining their virulence over considerable periods of time. For example, if tubercle bacilli are deposited in dark, damp, cool places, they may remain alive several months. Naturally, this fact complicated the problem since such conditions frequently obtain in stables so that for some time after a tuberculous animal had died or had been disposed of, living tubercle bacilli capable of causing disease in other animals were still present. The opposite extreme obtained when the germs were deposited where they were exposed to direct sunlight as it was found that only two to eight hours of such light is necessary to kill them. Between these two extremes they live varying lengths of time, depending largely upon sunlight and temperature. Cold has little effect on them; that is, they can be frozen in ice and retain life and virulence. They even tolerate the temperature of liquid air for hours; therefore, contrary to a rather general opinion, the freezing of winter does not destroy tubercle bacilli about the stable and barnyard. On the contrary, it was learned that they will not tolerate much heat. If milk or other material in which they are present is heated to 186 degrees Fahrenheit and this temperature is maintained for one minute all bacilli are destroyed. This was of great importance to organisations which purchased large quantities of milk and retailed it in small amounts to homes and made butter, cheese, milk powder, etc., from it. This resulted in a method of treating milk, known as pasteurization, which simply consists of maintaining it at a temperature of 142 to 145 degrees F. for thirty minutes. When this was carefully done no tubercle bacilli remained alive. For small organizations such as the farm home, where special pasteurization facilities are not available, it is only necessary to heat the milk until it starts to boil and quickly cool it. This is known as the flash method and suffices to kill all tubercle bacilli.

HUMAN TUBERCLE BACILLI.

Ravenel calls attention to an observation by Cozette as follows: "In a well kept stable, containing 24 cows and one bull, all in good condition, tuberculosis had never been known. In 1886 two cows began to cough and were slaughtered, one being so badly tubercular that it had to be condemned. One after the other all the cows in this same row were attacked and were sent to the slaughter house, as soon as they became ill, but in 1892, the tuberculin test showed that of the 20 animals composing the herd, 7 were tubercular, these 7 being in the same row, the 12 in the other row being quite sound. The diagnosis was confirmed by postmortem examination in all of these cases. Inquiry into the cause of the contamination of the stable revealed the fact that in 1883, three years before the recognition of the first two cases, the farmer had engaged as a herdsman, a man suffering from pulmonary tuberculosis. This man slept in the stable immediately over the two cows which were the first to fall ill, and was in the habit of coughing and expectorating constantly. He resided in the stable until 1891, in the meantime having been treated for pulmonary tuberculosis. In the absence of all other opportunities for contamination, and the fact that no strange cattle had been brought in, which might have introduced the disease, it seems impossible to avoid the conclusion that this stable was infected by the tubercular attendant; and especially in view of the experiments related on the foregoing pages of where animals have been rendered tubercular by the products of diseased men."

EVOLUTION OF TUBERCLE.

A detailed microscopic study of just what happens when tubercle bacilli are introduced into the animal's body revealed valuable facts. It was shown that promptly, in fact within an hour, after the organisms are introduced into the blood stream of an animal, the neutrophils or white blood cells have ingested them. These neutrophils, while in normal state of health, have the ability to change their shape like amoebae so they can pass through the finest capillaries of the body. The tubercle bacillus is poisonous to the neutrophils and soon after it has been ingested, this poisonous effect results in causing the neutrophil to lose its amoeboid action without which it is too large to pass through small capillaries. Therefore, no matter whether the neutrophil ingests tubercle bacilli along the digestive tract, the respiratory tract, directly from the blood stream or anywhere else in the body, it may lodge in a capillary wherever it happens to be when it loses its amoeboid action. This may be in the brain, a lung, a kidney, a bone, a joint, or any one of the many parts of the body. Thus, tubercle bacilli inhaled are not necessarily focalized in the lung; they may reach the brain, while those ingested may be focalized in the lung without leaving any trace of disease in the digestive tract or the abdominal lymph nodes. In fact, neutrophils containing tubercle bacilli as they are carried about in the blood stream lodge in those parts of the body most richly supplied with fine capillaries, such as the lungs and the brain. This afforded a clear explanation as to how the bovine type of tubercle bacilli introduced into the bodies of children through the digestive tract, frequently is focalized in such places as the bones, joints, lymph nodes, meninges, and lungs, where it sets up disease.

While the lodged neutrophils containing tubercle bacilli are dying, another kind of white blood cell, apparently a modified lymphocyte, comes to the rescue. These cells appear in large numbers and completely surround the dying neutrophils which they ingest together with the tubercle bacilli content. Thus, the bacilli are prevented from escaping from the point at which they were first lodged. Soon after this, typical lymphocytes surround the involved area. In due time, the connective tissue cells in this region begin to multiply and finally produce a dense wall of scar tissue around the tubercle bacilli. Later lime is deposited in this area and sometimes pure bone is laid down. Thus, the tubercle bacilli are encapsulated by a limestone or a bony wall. This is why so many infected cattle and humans never fall ill from tuberculosis and yet after slaughter, because of the tuberculin reaction, or postmortem examination of humans dead from other conditions, these small walled-off areas of disease are found. This is also why it usually takes so long after an animal has become infected with a moderate dose of tubercle bacilli before there is any evidence of disease except the tuberculin reaction; that is, the animal appears sleek and healthy in every respect. Careful studies have revealed, however, that the walls which imprison the tubercle bacilli may later be resorbed or ruptured and the germs are liberated in large numbers and may set up disease which eventually causes illness and becomes contagious. The longer the animal lives after being infected with tubercle bacilli, the more likelihood there is that these prison walls will give way. Thus, one always finds more significant tuberculosis from the standpoint of illness and contagion among the older cattle of the herd, particularly the cows. When all of this was learned, man was in a much better position to understand the relationship of tuberculosis in cattle to that of human beings.

Observations on Incidence of Tuberculosis among Cattle.

How this type of bacillus reaches the human body involved a study of the incidence of tuberculosis among animals of both the dairy and beef types. The tuberculin test afforded an excellent method of making such determinations. From the time Leonard Pearson first administered this test to cattle in 1892 until 1908, there were 400,000 cattle tested in the United States, of which slightly more than 9 per cent. reacted. The incidence of infection was higher in dairy than in beef cattle, and it ranged from 5 to 50 per cent. in the dairy herds. Beef cattle are slaughtered young; usually they are not stabled and, therefore, tuberculous infection among them was found to range from one-tenth of 1 per cent. to 30 per cent. with an average of about 2 per cent. In contrast, Deirnhofer reported in 1932 that in the North of Germany 60 to 86 per cent. of all cows are infected with tubercle bacilli. In England in 1932, on the basis of the tuberculin test, approximately 40 per cent. of the cows were infected with tubercle bacilli. In 1937, Griffith stated that in Great Britain more than one-third of the milk cows are tuberculous. Thus, the incidence of tuberculosis in cattle varied according to the nations.

Communicability of Bovine Tuberculosis to Man Strongly Suspected.

Carmichael of London in 1810 published an essay on the nature of scrofula with evidence of its origin from the disorders of the digestive organs. He believed that cows' milk was a frequent cause. In 1846, in a book of ninety pages, Klencke presented the clinical histories of sixteen children fed on milk of scrofulous and tuberculous cows, all of whom acquire tuberculosis either of the intestines, lymph nodes, skin or bones. He came to the conclusion that human scrofula and the disease found in animals are identical. Chauveau insisted that tuberculosis of cattle is transmissible to man through the use of meat or milk. Villemin said that "calcareous phthisis of cows is identical in nature with tuberculosis of man." Proof that tuberculosis in cattle is transmissible to other animals was easily made by inoculations but to prove that it is transmissible to man by direct inoculation was an impossibility. However, evidence from various sources was sufficiently convincing. For example, physicians reported extensive tuberculosis of the abdomen of children from homes where there was no tuberculosis among other members of the family, and that such infants and children had been fed fresh milk from cows with advanced tuberculosis. Cases in young adults with reasonably good evidence were also reported. For example, Ollivier in speaking before the Paris Academy of Medicine cited the case of a boarding house for women where the milk of one cow had been used for several years. This cow was found to have advanced tuberculosis of the internal organs and also of the udder. Twelve of the boarders developed tuberculosis, five of whom died. In no case was there a history of tuberculosis in the family and all but one had tuberculosis of the intestinal tract.

Tuberculosis frequently developed among men who took care of cattle with tuberculosis. In some villages of Beauce, where families lived in stables in close contact with the cattle all winter, Bigoteau found a high prevalence of tuberculosis.

B.C.G. (BACILLUS OF CALMETTE AND GUERIN).

Tests carried out during 1927, Schroeder said, were even less encouraging than those of 1926, which showed that BCG did not provide anything approaching complete immunity. Schroeder warned that the BCG vaccine is a living, attenuated culture of an originally virulent bovine tubercle bacillus, and that our present knowledge of the fate of living tubercle bacilli in the bodies of animals requires that we should be very careful about adopting any alleged methods of tuberculosis control which requires exposure to living tubercle bacilli of any kind, type, or degree of virulence. He referred to the wide and premature publicity the BCG vaccination had received. He said that it seems to have inspired much unwarranted hope that a door finally has been opened through which tuberculosis can be driven easily and speedily out of existence, a hope which tends to encourage a disregard for tried and proved methods to check human tuberculosis and which raises the question whether our fight against tuberculosis among the lower animals is economically sound, or at all necessary for the protection of public health. He said that while BCG was being tested we should not be too sanguine in our expectations, as history has given us only examples of specific agents for the treatment and prevention of tuberculosis which proved forlorn hopes.

IMMUNITY.

Watson later re-emphasizes that bovine tubercle bacilli, whether introduced naturally or by artificial means, may : (1) Rest in a state of inactivity for indefinite periods of time, or (2) excite a reaction with the formation of tuberculous foci which (a) completely heal and disappear at an early stage and leave no trace, (b) become localized, limited and inactive, and remain as such, and (c) lead to progressive and fatal disease. BCG does not prevent the animal from absorbing pathogenic tubercle bacilli and becoming a carrier and spreader of virulent tubercle bacilli. While a method of immunization which protects against active tuberculosis and enables the subject to tolerate the presence of virulent tubercle bacilli is undoubtedly a forward step, unless it destroys those bacilli, it does not reach the goal at which we aim.

Watson pointed out that many animals, especially the young, living in a tuberculous environment, can and do escape or successfully resist infection without the aid of artificial immunization. Therefore, too much weight should not be attached to the fact that young vaccinated cattle show slight or no evidence of tuberculosis when killed at an early age and up to two or three years, unless an equal number of non-vaccinated cattle of the same ages which have lived with the vaccinated under the same conditions of exposure, show marked evidence of active disease. The real test must come after the animals have been under the strain of frequent breeding and heavy milk production for several years. Clinically demonstrable tuberculosis resulting from natural infection is rare in calves—as a rule, very rare. The majority of demonstrable cases occur in the older animals and the advanced or generalised cases mostly in elderly cows. The majority of tuberculin-reacting cattle in which no lesions are found at postmortem are young animals.

DIAGNOSIS OF TUBERCULOSIS IN CATTLE.

The symptoms of tuberculosis in cattle are presented in the following quotation of the sixth and seventh annual report of the Bureau of Animal Industry in 1889-90 : "The beginning of the disease usually passes unnoticed, inasmuch as it is very slow and insidious and rarely accompanied by fever. When the lungs are involved a dull, short cough is noticed, which may later on become prolonged, convulsive, and very troublesome to the animal. The cough is more frequent in the morning after movement and drinking. The breathing varies ; only when much of the lung tissue is diseased it is laboured and accompanied by active movements of the chest and nostrils. Discharge from the nose is rare or absent. At times, however, when the tubercles have broken down and formed in the lungs cavities containing cheesy masses, or when the air tubes have become filled with cheesy and mucous masses, coughing will dislodge these and cause their discharge. In advanced stages the breath may have a disagreeable odour. Pressure on the chest wall may give rise to pain.

"The general effect on the body is at first slight. In fact, animals may remain in good flesh for a considerable time. Invariably, as the disease progresses, loss of flesh and appetite and paleness of the mucous membranes become manifest. These are accompanied by a gradual diminution of the milk secretion. The debilitated condition of the animal is also manifested by a staring and a tough, dry, harsh skin (hide-bound). Digestive disturbances are indicated by tympanites or distention of the rumen by gas, colic and diarrhea alternating with constipation. The animal generally dies from exhaustion after a period of sickness which may last months and years."

HUMAN TUBERCLE BACILLI.

Ravenel fed four calves with human sputum in 1898. All developed tuberculous lesions. In 1902 he infected a calf with a human culture of moderate virulence by administering large and repeated doses. At the end of 106 days the animals died and at autopsy the lungs, liver, omentum, mesentary and bronchial lymph nodes were found to contain tubercles. A second calf inoculated from the first lived only forty-eight days, while a third, inoculated from the second, lived twenty-three days. Fourth and fifth calves inoculated in a similar manner lived twenty-four days. This experiment led him to believe that he had not only transmitted the human type of tuberculosis to cattle but through successive inoculations had increased the virulence for cattle.

Bovine Type of Tubercle Bacilli Cause Tuberculin Reactions in Humans.

In 1939 Stahl reported a case of an outbreak of the bovine type of tuberculosis in Horred, Sweden in a herd from which, in May 1935 when physical examination was made, one cow was removed on account of tuberculosis. In May 1936, another cow was removed because of evidence of disease on physical examination. In September 1936, in Horred, several children showed symptoms of tuberculosis but a careful search among their human associates revealed no source. By the middle of October, thirty such cases had been reported. Altogether fifty infected persons were discovered, of whom nine were from thirteen to sixty-four years old. Finding no human source, another examination was made of this herd of cattle and samples were taken of the milk from the twenty-two cows in the herd. The clinical examination revealed that one animal had mastitis but tuberculosis was not suspected. However, large numbers of tubercle bacilli were found in the milk of this cow. On postmortem examination, tuberculosis was found in such parts as the right lung, the mesenteric lymph nodes, and throughout the left half of the udder. Among 102 children in the community who did not consume milk from this cow, only eight reacted to tuberculin, while among thirty-two who had consumed this milk, twenty-nine were reactors. Among twenty-nine children in the community under school age, eleven who did not take any of the infected milk were negative to tuberculin, while of eighteen who drank the milk, sixteen were reactors.

Since 1935 all the inhabitants of Horred had been obliged to drink the milk from the Horred dairy except those who had their own cows. This is because this herd since 1935 had been attached to the state subidized organisation for the prevention of tuberculosis in cattle. Pasteurized milk was objected to and, thus, raw milk for drinking purposes was consumed. This epidemic shows that we have not passed the danger of contracting tuberculosis from cattle. Moreover, it indicates the great importance of periodic tuberculin tests among cattle, which were omitted in this herd; finally, that all milk should be pasteurized.

TUBERCULOSIS IN CATTLE.

Prior to the use of the tuberculin test, the actual incidence of tuberculosis in cattle was not known since only those which were definitely ill or had died were recognised as tuberculous. The much larger group with primary complexes or the destructive forms of the disease in the pre-symptom stage were not suspected of having tuberculosis. Thus large as the problem among cattle had previously been thought to be the tuberculin test revealed that it was far more serious than anyone had suspected.

In 1908 Bang of Denmark pointed out that the opinion prevalent among many medical men that tubercle bacilli are ubiquitous is fallacious, that they are never found except in places where animals (or human beings) discharging tubercle bacilli live or have lately lived. He says "Tuberculosis is a purely contagious disease."

In 1911 Moore (America) said "As a destroyer of man tuberculosis has no equal; as a scourge of cattle, there is no other with which to compare it." In 1924 Van Es said that the discoveries of Villemin and Koch showed "to what a frightful extent tuberculosis has eaten its way into the human and animal population." He said that in a cattle population of more or less constant numbers the tuberculosis rate doubles every 15 years and if the bovine population is a growing one, the rate of infection dissemination will be even more rapid.

Tuberculosis was introduced into America through the imports of fine beef and dairy cattle from Europe. It has appeared among the cattle of all parts of the world whenever the bacilli have been carried to them.

Through many centuries cattle were seen to gradually fall ill with a slow wasting away or consumption of their bodies. Post mortem examination of such cattle revealed marked destruction of their lungs and other organs by a disease process. The disease which was observed was shrouded in mystery. It kept its secret for centuries but the curiosity of man caused him to observe and ponder. At unguarded moments the penetrating eyes of men caught glimpses of a secret here and there. With a few secrets revealed, men with superior ingenuity observed that by the time their eyes caught evidence of the disease it was nearly always fatal to the animal. They saw that in some parts of the world it was prevalent. A foremost question was why does the animal develop it. Much mystery was still associated with the air. Therefore it was believed responsible for various diseases ; extremes of heat and cold received their share of criticism. The air of buildings in which cattle were stabled was thought to be harmful because of the lack of light, dampness and inadequate circulation. Animals kept in large towns were thought to have tuberculosis more often than those in the country because of the dust, smoke and other contamination of the air.

It was early recognised that the disease was spread from animal to animal through feeding and watering troughs ; through calves suckling tuberculous cows, particularly when the disease involved the udders ; through calves being fed raw skim milk from creameries where the milk from many herds was mixed together. The milk might be contaminated within the udder if lesions were present there but especially from the dust of the stables and from particles of manure containing tubercle bacilli that entered the milk pail during the process of milking. Some of the cattle with tuberculosis coughed, and tubercle bacilli could be recovered from the discharges. Therefore the feed troughs were contaminated as well as the animals in direct contact with them. but since cattle do not expectorate, the majority of the bacilli from the lungs were swallowed and, therefore, those from this source as well as from areas of disease in the digestive tract were eliminated in the faeces. Thus tubercle bacilli reached the outside world in the stable, the pasture, or wherever the tuberculous animals happened to be. Other species of animals in the fields feeding after cattle, such as pigs, frequently became contaminated with the bovine type of tubercle bacillus. Even horses, sheep, goats, dogs, cats and other domestic animals were known to develop the disease from direct or indirect contact with the cattle.

Five measures were planned at this time and ultimately executed (1922).

1. (1) The accredition of the whole U. S. A. by states, and within the states by counties.
2. (2) The education and licensing of veterinarians so that they were adequately trained to carry out the work and standards set by the Bureau.
3. (3) The education of the public and the law-making bodies in all the political divisions of the country so that the public funds would be available to compensate for this strictly Public Health measure.
4. (4) The adequate compensation to individual farms for the cattle slaughtered so that financial ruin would not follow their co-operation with the Government's plan.
5. (5) A yearly compilation of all the available figures on the result of the tuberculin testing to serve as a guide for future plans as well as an estimate of the accomplishments to date.

Pearson called attention to seven ways in which tuberculosis works to the financial injury of owners of livestock as follows :—

(1) By destroying animals outright, as when tuberculosis is allowed to reach its full development and kills its victim.

(2) By reducing the market value of the animals, as in those cases in which the beast is sold before the disease has reached such a stage as to render it entirely unmarketable.

(3) By reducing the breeding value of a herd and its general productivity.

(4) By causing a waste of cattle feed through feeding it to animals that cannot give an adequate return.

(5) By infecting other animals, swine, calves, grown cattle through the milk or by contact.

(6) By injuring the reputation of the herd, thereby rendering it difficult to dispose of the animals or their products.

(7) By destroying the enthusiasm or interest of the breeder in the maintenance of his herd at a high standard.

In 1926 the Health Department of the City of Chicago forbade the sale of milk except from herds free from tuberculosis.

Special investigation in the middle west (1928) revealed the fact that 96 per cent. of the carcase condemnations for tuberculosis in swine were traceable to feeding them unsterilised skim milk or other dairy products or allowing them to follow cattle.

The diagnosis of tuberculosis in swine was given little consideration in the earlier days of the tuberculosis control movement among animals because so rarely were there internal manifestations of the disease among them. The lesions were nearly always found on post-mortem examination. **Symptoms and physical signs** had played no role. In 1906 the Bureau of Animals Industry conducted some experiments on the administration of the tuberculin test to hogs which showed that when the proper precautions are taken the diagnostic value of tuberculin is as great as in cattle. They found the test reliable in 95 per cent. of the animals examined. At that time the bovine type of tubercle bacillus was the chief offender, and therefore tuberculin made from either the human or the bovine type of bacillus sufficed to detect the infection. However, in later years, it has been necessary to use tuberculin made from the avian type of bacillus, since infections by this type do not always sensitize the tissues to tuberculin made from the mammalian type. Even **gross pathological examinations** do not determine the etiology of the disease, since there are other conditions that produce lesions which cannot be differentiated from tuberculosis except by **microscopic** examination or **animal inoculation.** For example, in 1927, Day et al. of Chicago called attention to parasite nodules resembling tuberculosis in the lungs of swine. The nodules caused by lung worms closely resemble those caused by tuberculosis and one may easily be misled if an attempt is made to differentiate them by the naked eye.

Contrary to the general belief goats do develop tuberculosis and therefore the milk from these animals is not without danger. The sale of goat's milk has been promoted on this misconception. Goats develop tuberculosis of the bovine type fairly frequently if they are associated with tuberculous cows. **Goat's milk should always be pasteurised if it is to be used for human consumption.**

In 1921 McNutt (Iowa) stated that the goat has long been considered highly refractory to tuberculosis infection which was a supposition based on limited observation and experimentation. Due to the fact that the goat has not been extensively slaughtered at supervised slaughter houses, accurate records upon which to determine the extent of the disease in this animal over any considerable period of time are not available. On the assumption that the goat is rarely tuberculous, the substitution of goat milk for cow milk has been intensively made as a prophylactic measure against human tuberculosis. Since tuberculosis in goats is not as rare as has been thought the security felt by those using unpanteurised goat's milk is false.

Apparently the bovine type of tubercle bacillus is the chief cause of tuberculosis among goats.

Tuberculosis in cats and dogs is not an uncommon disease in some nations where from 1 to 10 per cent. of these animals suffer from it. The bovine and human types of tubercle bacilli cause the disease in dogs. Apparently the bovine type is chiefly responsible for the disease in cats. In horses both the human and the bovine types of tubercle bacilli produce lesions. The avian type also occasionally attacks horses.

One of the essentials of the Pennsylvanian plan was the education of the public with regard to tuberculosis. There were numerous persons who maintained that an animal could not have tuberculosis as long as it looked well and ate well, in other words, they were not convinced of the facts which the vet had in his possession, such as the specificity of the tuberculin test as revealed by the post mortem examination. The veterinarians realised that the only way to teach the facts to such persons was by giving them ocular demonstrations. It was only when a man had seen a herd of tuberculin reactors alive, had seen them killed, and had actually observed the areas of disease in their carcases that he was willing to admit that an animal can have tuberculosis to a dangerous degree, and still appear normal in every respect. Pearson called attention to a community in one of the eastern counties of Pennsylvania in which many farmers were opposed to any inspection of herds for tuberculosis. At one period the owner of 12 cows lost 3 from tuberculosis and he applied to the State Board for tuberculin testing of the remaining 9 ; all reacted. This aroused the curiosity of the entire community. An arrangement was made for the appraisal and killing of these 9 cattle, when 1200 farmers from the neighbourhood attended the post mortem examinations. Here before their eyes was produced evidence which could not be broken down by all the dealers, butchers and other misinformed persons in the world. No matter what was said, what was written by way of opposition in newspapers, agricultural journals, or in special pamphlets, they had seen with their own eyes the ravages of tuberculosis in the bodies of animals which only a few days before had appeared healthy to them. From this community there now came a flood of applications for the testing of herds.

A. J. Glover, Editor of "Hoard's Dairyman" said in 1930 : "There was nothing unusual about these objections (to testing of herds) for no progress is made without resistance." In time, however, it became so self-evident that bovine tuberculosis was a heavy drain upon live stock interests that the leaders soon saw the wisdom of attempting to clean up their herds. It took approximately a quarter of a century for them to comprehend that they were bearing very largely the cost of this disease and were handicapped in many ways by harbouring it in their herds. It was also comprehended during this period that promiscuous testing, that is, testing a herd here and there and eliminating reactors, would not accomplish the desired result, which is to get rid of all tuberculosis contagion. It was little use for a stockowner to test and eliminate reactors if his cattle ran in a pasture that adjoined one of a neighbour who owned an infected herd. It became plainly evident that the only way to attack this disease was on the **area** plan, and the county in most instances has become the unit. Since the adoption of the area plan of tuberculin-testing, the work of eradicating bovine tuberculosis has gone forward rapidly and satisfactorily. Here and there, to be sure, there are still objectors but they are so few in number as to offer scarcely enough resistance to stimulate those in charge of the work to put forward their best efforts."

Numerous methods of controlling tuberculosis in chickens has been attempted. One consists of removing the **older ones** from the flock. Smith is of the opinion that controlling tuberculosis by this method among fowls is the principal cause of the reductions in percentages of swine retained for tuberculosis at slaughter houses.

Another method is to administer tuberculin and **remove all reactors from the flock.** This is a basic step because the test is highly specific and detects those which have even microscopic lesions long before the disease becomes contagious. Even though all reactors are removed and there is no fowl in the flock that is eliminating tubercle bacilli, a serious problem exists if the disease has previously been present in the flock, inasmuch as the avian tubercle bacillus may live in the soil and filth of contaminated barnyards for years. **Disinfection** of the premises where tuberculous chickens have contaminated the soil can be accomplished but it is a difficult task. Therefore it may be safer and less troublesome to remove the chickens to **another yard,** where the soil has not previously been contaminated with the avian type of tubercle bacillus.

The tuberculin test should be repeated at intervals of a few months to a year, to detect the fowls which have been infected in the interim. **Any addition to the flock** should be carefully tested and examined to make sure they are not carriers of tubercle bacilli.

Dr. Myers cites the following amusing letter which reached him following a lecture he gave on tuberculosis.

"1. 4. 1932.
Minnesota.
Mr. J. Arthur Myers.

Sir; I read your speech regarding the cow testing war in Iowa and Nebraska. If the Bible is true, the human race is the only living things that is subject to the tuberculosis. This cow testing is only a scheme to export money out of the farmers. If testing our cows could in any way help to blot out consumption then why did the disease increase over one hundred per cent. in 1931. My Veterinary Surgeon license was obtained 63 years ago and I cannot swallow this late day humbug. A few years ago it was a fine for anyone to spit on the sidewalks as it helped to breed consumption. The lazy money sharks could not gain any finance by that. Then the next scheme was to throw it all on to the good old milch cow. If there was such a thing as tuberculosis in the cow, then the Bible is mistaken and there would be no living people on the earth to-day. Our farmers are robbed on every side of the road and you know it. Christ tells people not to be desceived. This county agent is another financial robbing scheme on us farmers, now you are lending aid to the corrupt swindlers. The Good Book says we all have to become fools in order to be made wise. Farmers are loosing their farms pretty lively and sooner or later they will see where they made a big mistake by letting sharkers push all kinds of dope down the farmers throat. After county agents got wise enough to fool the farmers in buying everything they said then we got alkinds of foul weeds on our farms. Soon the money intrist will own all the land, then goodby farmers. Then you will that we all ought to stand up for our rights as the Iowa and Nebraska farmers did.

L. C. M."

In 1917 Kiernan said "The American people can eradicate tuberculosis or prevent its eradication. It is not the vets that are going to accomplish the work entirely ; it is not live stock sanitary boards ; **but the live stock owners themselves!** . . . . It is believed that the best way to have this work introduced into a circumscribed area is to hold meetings ; and put the matter clearly before the people as to every step it will be necessary to take, in order that success may be attained. If the people are not desirous of taking up the work under those conditions, it is best to leave them alone, until such time as they can see their way clear to co-operate."

"Goodbye T. B. Cow."
Soon you'll not see a T.B. cow
That coughing low-down critter ;
The vets now have her on the run,
Her old-time friends have quit her.
For spreading germs she is renowned,
Her milk it is polluted,
She isn't worth her board and keep,
For breeding she's not suited,
From States now numbering forty-two,
Crusaders, wise and clever,
Have banished her and sealed her doom
In U. S. A. forever.

Rudolph Spires Allen.
(1936).

(I am largely indebted to "Man's Greatest Conquest Over Tuberculosis" — Myers, for the foregoing resume.)

CANCER.

The following table shows the mortality and death-rates from Cancer since 1930.

YEAR	No. OF DEATHS.	DEATH RATE PER 1,000 OF POPULATION.
1930	141	0.9
1931	140	0.91
1932	135	0.88
1933	134	0.88
1934	151	1.0
1935	153	1.0
1936	160	1.1
1937	173	1.2
1938	149	1.0
1939	158	1.1
1940	170	1.2
1941	161	1.1

SHOPS (CONDITIONS OF EMPLOYMENT) ACT, 1938.

Part VI. of the above Act is now administered by the Sanitary Sub-Officers. Their duties under this section comprise regular inspection of shops in their district to ensure that :—

(1) In every part of a shop in which persons are employed by the proprietor of such shop to do shop work—

(a) suitable and sufficient means of ventilation shall be provided and suitable and sufficient ventilation shall be maintained :

(b) suitable and sufficient means shall be provided to maintain a reasonable temperature and a reasonable temperature shall be maintained.

(2) In every shop, not being a shop in respect of which an order made under sub-section (6) of this section is for the time being in force, there shall be provided and maintained suitable and sufficient sanitary conveniences available for the use of persons employed in or about the shop.

(3) In every part of a shop in which persons are employed to do shop work, suitable and sufficient means of lighting shall be provided, and every such part of such shop shall be kept suitably and sufficiently lighted.

(4) In every shop, not being a shop in respect of which an order made under sub-section (7) of this section is for the time being in force, there shall be provided and maintained suitable and sufficient washing facilities available for the use of persons employed in or about the shop.

(5) Where any persons doing shop work take any meals in a shop, there shall be provided suitable and sufficient facilities for taking those meals.

56.—(1) Where in any room in a shop female members of the staff are employed in the serving of customers, it shall be the duty of the proprietor of such shop to do the following things, that is to say :—

(a) to provide seats (in the proportion of not less than one to every three female members of the staff employed in such room) for such female members either behind the counter or in such other position as may be obtainable for the purpose ;

(b) to permit the female members of the staff so employed to make use of such seats whenever the use thereof does not interfere with their work ;

(c) to give notice in the prescribed manner and in the prescribed form of the provisions of paragraph (b) of this sub-section.

It is to be noted that (Section 56 (2)) if the proprietor of a shop fails, neglects or refuses to comply with the obligations imposed on him by this section, such proprietor shall be guilty of an offence under this section and shall be liable on summary conviction thereof to a fine not exceeding, in the case of a first offence under this section, three pounds and, in the case of a second or any subsequent such offence a fine not exceeding five pounds.

One report (Bundoran) only was received by this Department from any of the above officials as to their activities in connection with the Act during 1941.

HOUSING.

The Health Committee of the League of Nations concluded, as a result of enquiries begun in 1931, that an amelioration of the standard of health in the countryside is inconceivable without a parallel improvement in the living conditions of the population. "Obviously health, economic and social factors cannot be considered separately, and the **concept of the standard of living must form the basis of any real progress in public health.**"

The object is to ensure an environment favourable to the development of the individual and the family and unfavourable to the appearance of all kinds of disease and to the transmission of infectious diseases. A method which has been tried (pre-war) in certain countries such as Poland is to add a special room to the family home for the exclusive use of the tuberculous patient.

The Housing Committee of the League at its first meeting recommended that national housing committees should be set up in all countries. These committees offer the best possible organs for ensuring extensive and national co-operation in the international and the national spheres. In the interest of community health such committees should be set up in all countries. Before the war the Polish Committee under the chairmanship of the former Minister of Public Health consisted of thirty members ; 9 medical men, 17 engineers, and others representing different activities. Unfortunately the outbreak of war put an end to its operations.

Standards of density.

In England it is considered desirable to limit the maximum density to twelve houses per acre. This standard is regarded as satisfying all requirements in respect of insolation and lighting whilst taking account of psychological needs. It should be mentioned that the standard enables a small garden of about 300 square yards to be attached to each house, thus providing the inhabitants with certain amenities and opportunities for occupation and recreation. In rural districts the desirable standard is eight houses per acre.

The number of cottages completed under the Labourers' Acts during the year 1941 was 5, and the number in course of erection at the end of the year was 28.

Housing (Inspection of Districts) Regulations, 1936.

No reports were received under the above Regulations during the year 1941.

Letterkenny.

The first section of the 90-Houses Scheme, consisting of 30 houses, was commenced during the year and is due for completion in October, 1942. These houses are intended for the re-housing of families removed from unfit dwellings in the town.

ACHT NA dTITHE (Gaeltacht) 1929.

1.	Iarrataisi a fritheadh,	3,909	
2.	Méid Iarratas a ceaduíodh,	2,248	
3.	Méid airgead a ceaduíodh,		£171,475 5 0
4.	Méid airgead a h-íocadh,		£103,568 18 2

De 2 thuas tá 702 casanna nar chuaidh chun cinn leis an obair, agus cuireadh as feidhm an t-airgead a ceaduíodh ina gcoir. Fágann san go bhfuil 1546 cásanna ceaduithe agus £115,184 12 4 curtha in áirithe dhoibh.

Baineann an t-eolas so thuas leis an tréimhse o deineadh Acht na dTithe (Gaeltacht), 1929 do rith go dtí 31adh Márta, 1942.

WATER SUPPLY.

The Health Committee of the League of Nations laid it down that on the administrative side there is strong need for water requirements to be considered on a broad basis. On the one hand, the subject should receive consideration nationally as regards available water sources and their distribution and utilisation, and on the other, the authorities responsible for the provision of the water and its control should have sufficient financial resources to be able to plan water schemes for large areas and to be able to carry them out. At the same time there is need, especially in some countries, to educate the people to appreciate the supreme value of pure and adequate water and to demand its provision. In rural districts, large-area water schemes which spread the water-charges are valuable means to facilitate a demand for water.

It is worth emphasizing that all repair or other work carried out in connection with water supplies requires skilled supervision in relation to the risks of possible contamination, and the personnel engaged in such work also needs careful supervision.

Quantity of Water.

Figures of daily consumption vary greatly and no definite standards of requirements can be laid down. Broadly, however, provision should be made as a minimum, for 60 gallons per head per day in large cities, scaling down to 30 gallons for village supplies. These figures do not allow for any material wastage from leaks, but refer to amounts available for actual use. They must be regarded as minimum figures, and it is desirable that water should be available in abundance, or at all events in adequate quantities.

WATER SUPPLIES.

Section 4 of the Rosses Regional Water Scheme was completed during the year, serving the district from Annagry to Kincasslagh. Thus, five sections of the scheme for the Rosses, as originally designed, are now in operation, the fifth section — from Bunbeg to Derrybeg being installed last year. There now remains the sixth and last section to be dealt with — a line extending from Kincasslagh to Acres, including Burtonport. This is one of the most important parts of the area to be served, and but for difficulties connected with the provision of pipes and other materials there is little doubt that more progress would have been made towards the completion of the original scheme. The mains laid to the points referred to above are designed to take in the Acres and Burtonport areas, and as soon as the present emergency conditions pass, there is every prospect of having the water laid on.

The Lough Salt Water Scheme for laying water from the Lough to the existing Service Reservoir at Carnamuggagh was substantially completed, and an ample supply of water is now available at the Service Reservoir. A Contract has been placed for the laying of new Service Pipes from the Reservoir to the Mental Hospital and to the Urban Area. Delivery has been obtained of Valves and other materials necessary for the execution of the works, but so far a permit has not been obtained for the pipes required. Efforts are now on foot towards securing a permit, and the results are awaited.

In the village of Kilmacrenan, new distribution mains have been laid and fire hydrants installed, for linking up to the Lough Salt Supply.

NARIN AND PORTNOO WATER SUPPLY. A Contract was placed for this work, and all arrangements made to have the work started. The Contractor, however, reported that he was unable to obtain offers of many of the materials required for the execution of the works, principally iron and steel goods, and, in consequence, he declined to proceed with the undertaking. Efforts to overcome this obstacle proved unsuccessful. Reports were placed before the Ministry, and eventually a decision was reached to postpone the work until conditions were more favourable. The securing of all necessary rights to lands and water were continued, so that everything should be in readiness to start, as soon as the materials are available.

ARDARA WATER SUPPLY. A survey was made of an auxiliary source to supplement the existing supply, and gauges were erected on a selected stream. The gaugings are now being taken, and on the result of them it is proposed to formulate a scheme. If the supply of water is sufficient it is hoped to get it brought to the existing Reservoir as quickly as possible.

The gaugings and surveys for other water supplies which the Board are promoting were continued during the year, amongst the districts dealt with being the following :—

Clonmany, Convoy, Castlefin, Donegal, Dungloe, Kilcar, Rossnakill and Rossnowlagh.

A further Well and Pump was provided at Porthall.

In Ballyshannon, Plans and Specifications were prepared for a new Filter, to be installed on the existing supply.

SEWERS.

In Sewerage Works a Contract was placed for a scheme for the town of Killybegs. Most of the materials required can be obtained, and delivery of some has been made. It is hoped to make progress with the scheme during the coming year.

The provision of Sewers for old Labourers' Cottages in Ballyshannon was undertaken and completed.

The details of the above waterworks and sewerage schemes were kindly supplied by Mr. W. J. Doherty, Consulting Engineer to the Board of Health.

LETTERKENNY.

A Tender has been accepted for the completion of the Sewerage Scheme by Mr. John Hegarty, Contractor, Inver, Co. Donegal, and at the moment some of the materials are on the site and the work is ready to start immediately.

No sanction has yet been obtained to the site for the abattoir.

Tenders were invited for the Scheme of 90 houses and at the present time 30 are proceeding, the Contractors being Messrs. J. W. Cunningham & Co., Carrick.

Nothing further has been done regarding the underground lavatories at Market Square.

During the year a Relief Grant was received amounting to £750 and this is at present being expended in making a new road from the Kilmacrenan Road to the new housing site.

Inside the last month a very serious fire occurred at the bakery premises of Messrs. Larkin and also a fire, not so serious, at the premises of Mr. W. Dillon, Publican, and in each of these cases the seriousness of the water supply problem was felt very keenly, especially at Larkins, where the firemen had to wait twenty minutes from the time the hose was laid down until the water actually reached the branch pipe.

Although the new pipe-line has been laid between Lough Salt and the reservoir, the old pipe-line from the reservoir to the urban boundary is still to be renewed. This necessary work has been sanctioned by the Board of Health, but up to the moment there is no sign of its being carried out. With the advent of summer weather especially this is a very serious matter for the urban area, and it is to be hoped that the necessary piping may be laid without further delay.

The above particulars have been kindly supplied by Mr. C. V. McLaughlin, Architect, Letterkenny.

SLAUGHTER OF ANIMALS ACT, 1935.

The principal points in this Act were summarised in the 1937 annual report. As stated therein, the object of the Act is to provide for the proper treatment of animals in slaughter-houses, the humane slaughter of such animals by approved instruments, and the licensing by the Sanitary Authority of the persons using such instruments.

The Board of Health have, likewise, power to make bye-laws for :—

(a) securing the decent and seemly conveyance of meat through public thoroughfares.

(b) the inspection of meat to be sold for public consumption, and

(c) prohibiting the sale for human consumption of meat which has not been inspected in accordance with such bye-laws.

This matter of bye-laws is in abeyance for the moment, pending the framing of model bye-laws by the central authority. The Act has been adopted, however, by the Donegal Board of Health and Public Assistance, and all slaughtermen have now to be licensed, and their premises are open to reasonable inspection.

It is hoped that the working of this Act will do much to improve the quality of meat prepared for human consumption.

An important provision of the Act is the following :—

"No person, unless he is a registered veterinary surgeon or the holder of a slaughter licence for the time being in force shall slaughter any animal in a slaughter house" (Penalty £10 for a first offence).

The following is a list of current licence holders (up to 28th February, 1942) :—

Name and Address of Licensee.

John Melly, Boyoughter, Doochary,
John James McGettigan, Killybegs,
Thomas A. Taitt, Bawan, Convoy,
Doalty Boyle, Roshine, Acres, Burtonport,
John Crumlish, Slievebuck, Raphoe,
Hugh Sweeney, Drumatinney, Falcarragh,
Michael McEleney, Glebe, Clonmany,
John McBride, Sleighan, Derrybeg,
Thomas Stewart, Faugher, Ballymore,
Charles Crumlish, Drumoghill, Manorcunningham,
James King, Dunfanaghy,
Con McLoone, Glenties,
Joseph L. Patterson, Ballyraine, Letterkenny,
Thomas Boyle, Narin, Portnoo, Glenties.
Dominick Gallagher, Magheraclogher, Derrybeg,
Michael Cassidy, Main Street, Ballyshannon.
Edward Bradley, Drumhaggart, Manorcunningham,

Joseph Glackin Newtowncunningham,
Patrick Langan, Cloone, Cashelmore,
Anne Duffy, Raphoe,
James Patton, Castlefin,
James Harte, Corner House, Lifford,
Joseph McClafferty, Carrigart,
Charles Patton, Burnfoot,
Charles Roarty, Meenaniller, Derrybeg,
Phil Boyle, Croughboyle, Dungloe,
John Gallagher, Belcruit, Kincasslagh,
John B. Harkin, Binnion, Clonmany,
Robert Orr, Glebe House, Carrigans,
Andrew Gallagher, Main Street, Lifford,
Robert Lecky, Bridgend.

Summary of report received from Mr. F. McShane, Veterinary Inspector, Donegal.

BOVINE TUBERCULOSIS INSPECTOR.

18 Visits of Inspection of Animals.
3 Animals Slaughtered.
1. Death before arrival (on Post-mortem not affected).
15 Animals not affected.

SHEEP SCAB.

Inspection of Sheep at Fairs re Scab.

MILK AND DAIRIES.

Inspection monthly to June but owing to Foot and Mouth Disease no inspections till November.

INSPECTION OF MEAT STALLS.

Monthly Visits of Inspection of Slaughter Houses and Meat Stalls in Donegal, Ballyshannon and Bundoran. Weekly Visits of Inspection from June — November.

FOOT AND MOUTH DISEASE.

Two reports but on visits and inspection not Foot and Mouth.

MILK AND DAIRIES ACT, 1935.

The following table shows the applications granted, up to 31st December 1941, for the County Health District :—

District.	Veterinary Officer.	No. Registered.
Donegal,	F. McShane,	28.
Buncrana,	R. Marner,	30.
Milford,	E. O'Hagan,	5.
Letterkenny,	P. McGlinchey,	41.
Glenties,	T. A. McClintock,	76.
TOTAL,		180.

With regard to the Urban Districts of Letterkenny, Buncrana and Bundoran, the following Table shows the state of affairs at December 31st, 1941.

URBAN DISTRICT.	No. Registered.
Letterkenny,	12.
Buncrana,	8.
Bundoran,	12.
TOTAL, ...	32.

FREE MILK SUPPLY SCHEME.

A sum of £3,579 2s. 10d. was paid by the Board of Health for milk supplied under the Scheme during the year 1941. (This sum includes the cost of Full Cream Milk Powder). The amount paid during the year for Administration costs was £210 3s. 3d. The number of children in receipt of milk (either in liquid or powder form) on the last day of the year was 1,776 and the daily number of pints of milk being supplied was 1122. During the year difficulty was experienced in obtaining milk from registered contractors at a price which would be approved by the Minister for Local Government and Public Health. The prices paid for milk ranged from 1/2 to 1/6 per gallon. Milk powder was supplied in cases where natural milk could not be procured.

The figures given above are approximate. They are (in money) the actual amounts paid during the year, but do not necessarily represent the actual cost of the goods supplied during the year.

BUNDORAN.

The scheme operated from 1-4-'41 to 31-3-'42. Five children per day were supplied 160 gallons milk delivered at homes of recipients. Committee :—Councillors James Murphy, John Spratt and Terence Meehan.

MATERNITY AND CHILD WELFARE ACTIVITIES, 1941.

DISTRICT.	Expectant and Nursing Mothers.	Visits Paid.	Infants under 1 year.	Visits Paid	Children under 5 years.	Visits paid.
Annagry, ...	97	1743	58	977	137	2118
Ardara, ...	65	755	42	504	99	396
Arranmore, ...	39	635	23	491	82	891
Ballybofey and Stranorlar ...	141	1380	61	929	236	1995
Ballyshannon, ...	122	1318	113	838	189	1564
Bruckless, ...	41	464	41	820	74	896
Buncrana, ...	149	315	138	552	408	1670
Bundoran, ...	57	1578	29	1568	98	2235
Carndonagh, ...	150	741	46	500	166	1007
Carrigart, ...	114	917	91	711	164	1650
Clonmany, ...	170	1251	85	900	225	1251
Convoy, ...	68	337	51	395	164	1257
Derrybeg, ...	86	895	36	753	96	1618
Donegal, ...	108	881	85	718	195	1704
Doochary, ...	31	570	13	2006	78	2003
Drumholm, ...	124	1137	67	1206	39	815
Dunfanaghy, ...	28	562	25	385	77	676
Dungloe No. 1., ...	53	808	30	604	162	1804
Fahan and Inch, ...	72	573	51	1290	133	1422
Fanad No. 1., ...	52	620	44	658	157	1234
Fanad No. 2., ...	56	518	45	514	135	980
Fintown ...	28	193	20	250	103	1236
Frosses, ...	85	799	60	698	186	1528
Glencolumbkille, ...	36	589	14	308	52	826
Glenfinn, ...	52	156	43	97	69	230
Glenties, ...	36	288	30	460	125	875
Gortahork ...	112	1402	81	1243	276	2334
Gortnasillagh, ..	16	350	11	130	20	230
Kilcar, ...	41	539	26	359	86	820
Kincasslagh, ...	43	328	21	250	90	526
Letterkenny, ...	166	1494	157	1692	356	2171
Lifford, Clonleigh and Castlefin, ...	115	2302	95	968	354	3950
Malin, ...	86	439	50	651	165	1394
Manorcunningham ...	47	123	43	43	14	20
Moville, ...	76	2045	54	1057	205	3173
Muff and Upper Moville, ...	97	848	86	625	111	1411
Ramelton, ...	119	1008	69	972	157	1608
Rathmullan, ...	77	897	49	712	116	2125
Taughboyne, ...	50	357	41	300	48	297
By Supt. P. H. Nurse Casey	71	82	66	73	112	122

SUPERVISION OF MIDWIVES.

Miss Casey, Superintendent Public Health Nurse, reports as follows :—

119 Visits of Inspection were paid to 86 Midwives, 2 Visits to each Dispensary Midwife with the exception of Arranmore Island and Tory. 3 Midwives who notified their Intention to Practice left the county and 2 reside in Northern Ireland. The work of the Midwives was generally satisfactory.

36 Visits were paid to 34 Jubilee and Dudley Nurses in connection with Maternity and Child Welfare and Tuberculosis visiting.

8 Visits were paid to 4 McDevitt Nurses in connection with Maternity and Child Welfare activities. The work of all these nurses was satisfactory.

The following is a summary of the various notifications received during the year 1941 from Midwives practising in the County.

1. Notification of Intention to Practise,	92
2. Emergencies for which Medical Aid was summoned :—	
Abnormal Presentations,	24
Abortions (threatened and complete)	11
Albuminuria,	2
Ante-partum Haemorrhage,	5
Congenital deformities (child),	2
Delayed Labour and Uterine Inertia,	72
Illness of patient during puerperium,	5
Illness of child after birth,	4
Phlebitis,	2
Placenta Praevia,	2
Post-partum Haemorrhage,	5
Premature Birth,	2
Puerperal Pyrexia,	4
Retained and Adherent Placenta,	12
Rupture of Perineum,	29
3. Notifications of Still Births, (26 of these Premature).	42
4. Notifications of Deaths,	13
5. Notifications of Artificial Feeding,	9
6. Notifications of Having Laid Out a Dead Body,	5
7. Notifications of Liability to be a source of Infection,	3

NOTIFICATION OF BIRTHS.

The following table shows the number notified to this department for the years 1937-1941, together with the total numbers of registered births as supplied to the Registrar General :

Year.	Notified to this Department.	Births Registered.
1937	1,736	2,345
1938	1,896	2,536
1939	1,814	2,448
1940	2,008	2,629
1941	2,208	2,710

We wish to remind those concerned of the legal obligation to report all births in the county to this department, as set out in the following legal statutes :—

(1) "In the case of every child born it shall be the duty of the father of the child, if he is actually residing in the house where the birth takes place at the time of its occurrence, and of any person in attendance upon the mother at the time of, or within six hours after the birth, to give notice in writing of the birth to the medical officer of the district in which the child is born, in manner provided by this section.

(2) "Notice shall be given by posting a prepaid letter or post-card addressed to the Medical Officer of Health at his residence, giving the necessary information of the birth within thirty-six hours after the birth, or by delivering a written notice of the birth at the Office or residence of the Medical Officer within the same ; and the local Authority shall supply without charge addressed and stamped post-cards containing the form of notice to any medical practitioner or midwife residing or practising in their area, who applies for same.

(3) "Any person who fails to give notice of a birth in accordance with this section shall be liable on summary conviction to a penalty not exceeding twenty shillings.

The following section should be carefully noted :

(4) The notification required to be made under the Act shall be **in addition** to and not in substitution for the requirements of any Act relating to the registration of births."

WELFARE OF THE BLIND.

The County Scheme administered by the Donegal Board of Health and Public Assistance is detailed in the previous annual reports. Briefly, it is as follows :—

1. A register of blind persons in the County is kept up-to-date.
2. Arrangements are made by the Board for the following :—
    - (a) The education or industrial training of suitable blind persons between the ages of five and thirty years.
    - (b) The employment in Workshops for the Blind of blind persons suitable for such employment, their maintenance in a Hostel, and the augmentation of their wages.
    - (c) The maintenance in Homes, of blind persons, who owing to age or infirmity, are incapable of work.
3. The Board may, in the case of unemployable and necessitous blind persons ineligible for education or industrial training under the Scheme, and living in their own homes, or in lodgings, grant assistance to such persons in accordance with the following scale :—

		Per Week.
(a)	Blind persons over 15 years and under 30 years of age,	10/-
(b)	Blind persons 30 years of age and upwards with pension,	4/- with pension.
(c)	Married man under 30 years of age with wife dependent on him,	15/-
(d)	Married man 30 years of age and upwards with wife dependent on him,	8/- with pension.
(e)	Additional allowance for each child,	2/6

The institutions approved by the Minister under the provisions of this Scheme are :—

NAME OF INSTITUTION.	Class of Blind Persons Received.
1. St. Mary's Institution for Female Blind, Merrion, Co. Dublin.	Females ; also Boys up to 7 years of age.
2. St. Joseph's Asylum for Male Blind, Drumcondra, Dublin.	Males.
3. Richmond National Institution for Industrious Blind, 41 Upper O'Connell Street, Dublin.	Males.
4. Cork County and City Asylum for the Blind, Infirmary Road, Cork.	Males and Females.

During the year 1941 assistance was rendered to blind persons in their own homes and in institutions at a cost of £283 0s 6d and £80 18s 0d respectively. The numbers in receipt of assistance at the end of the year were 26 in their own homes, and 4 in institutions for the blind.

COUNTY OF DONEGAL.

RETURN OF SAMPLES OF FOOD AND DRUGS ANALYSED DURING THE YEAR ENDED 31st DECEMBER, 1941.

NATURE OF SAMPLE	No. of Samples Taken.	No. certified to be adulterated.	No of prosecutions.	No. of Convictions.
Whole Milk, ...	280	3	3	3
Buttermilk, ...	10	—	—	—
Butter, ...	46	1	1	1
Margarine, ...	31	—	—	—
Cheese, ...	20	—	—	—
Cocoa, ...	4	—	—	—
Sugar, ...	9	—	—	—
Jam and Marmalade,	31	—	—	—
Bread, ...	2	—	—	—
Flour, ...	6	—	—	—
Intoxicating Liquor,	67	1	1	1
Non-Alcoholic Drinks,	8	—	—	—
Cream of Tarter, ...	3	—	—	—
Oatmeal, ...	3	1	1	—
Sauce, ...	2	—	—	—
Rice, ...	5	—	—	—
Tea, ...	4	—	—	—
Baking Soda, ...	6	—	—	—
Vinegar, ...	18	1	1	1
Olive Oil, ...	12	—	—	—
Tapioca, ...	3	—	—	—
Barley, ...	2	—	—	—
Treacle, ...	5	—	—	—
Lard, ...	5	—	—	—
Lentils, ...	1	—	—	—
Liquid Paraffin, ...	1	—	—	—
Mustard, ...	1	—	—	—
Custard, ...	1	—	—	—
Cornflour, ...	1	—	—	—
Castor Oil, ...	1	—	—	—
Tartarine, ...	1	—	—	—
Koffy-Tee, ...	1	—	—	—
Draw-Well, ...	1	—	—	—
TOTALS, ...	591	7	7	6

The following members of the Garda Siochana acted as Food and Drugs Inspectors in County Donegal during the year 1941 :—

Garda James Meegan, Letterkenny.
,, L. Connolly, Lifford.
,, P. J. Gavin, Newtowncunningham.
,, T. Maguire, Raphoe.
,, J. H. Flanagan, Buncrana.
,, P. Harvey, Muff.
,, M. Walsh, Moville.
,, P. McGurk, Carndonagh.
,, B. Garvey, Ballyshannon.
,, J. Dunne, Ballybofey.
,, J. P Treanor, Pettigo.
,, A. Sarsfield, Dungloe.
,, M. J. O'Malley, Clogher.
,, W. P. Arnold, Bunbeg.
,, C. Casey, Dunkineely.
,, P. O'Donnell, Carrick.
,, M. Canny, Mountcharles.
,, P. Egan, Milford.
,, M. Burke, Falcarragh.
,, P. N. Coughlan, Carrigart.

BURIAL GROUNDS.

List of Burial Ground Caretakers in County Donegal.

Burial Ground.	Name of Caretaker.	Address.	Salary.		
			£	s.	d.
Finner,	Patrick J. Quinn,	Finner, Bundoran.	4	0	0
Teetunny,	George Clarke,	Teetunny, Ballyshannon.	2	0	0
Killymard,	Isabella Irwin,	Dromore, Donegal.	2	0	0
Carn,	James Cathcart,	Pettigo.	2	0	0
Inver,	Thomas Mullan,	Inver.	1	10	0
Dunkineely,	Jas. Henderson,	Dunkineely.	4	0	0
Donegal Abbey	Ant. Gillespie,	Donegal.	5	0	0
Old Ray,	Andrew Harkin,	Ray, Falcarragh.	1	0	0
Tullaghobegley,	Manus Siyes,	Falcarragh.	1	0	0
Clondahorkey No. 1,	James McBride,	Rinclevan, Dunfanaghy.	1	0	0
Clondahorkey No. 2,	Moses Campbell,	Dunfanaghy.	1	0	0
Doe Castle,	Barney Boyle,	Doe Castle, Cresslough.	1	0	0
Magheragallon,	Jack Curran,	Derrybeg.	1	0	0
Milltown,	Thos. Canning,	Burt.	2	0	0
Drumhaggart,	Wm. Slater,	Muff	2	0	0
Grange,	James Reilly,	Grange, Burt.	2	0	0
Fahan Old,	Rev W. G. Dixon	Fahan.	2	0	0
Eskaheen,	Mary M'Colgan	Eskeheen, Muff.	2	0	0
Inch,	Geo. M'Intyre,	Inch.	2	0	0
Balleeghan.	Hugh Roarty.	Moneyhaughley,, Manorcunningham.	2	0	0
Aughanunshin	William Orr,	Ardrawer, Letterkenny.	4	0	0
Gartan,	Samson Tease,	Gartan, Churchill.	2	2	0
Leck,	Edwd. M'Grath,	Oldtown, Letterkenny.	4	0	0
Kilmacrenan,	Wm. Frieze,	Kilmacrenan.	2	2	0
Killygarvan,	Patk. M'Bride,	Rathmullan.	2	2	0
Rathmullan Abbey,	Jas. Ewing.	Killygarvan, Rathmullan.	2	2	0
Meevagh,	Denis Gallagher,	Clontallagh, Downings.	2	2	0
Ramelton	George Taylor	Ramelton,	2	2	0
Killydonnell Abbey,	Michl. Hannigan,	Kill Lane, Ramelton,	2	8	0
Ballindrait.	William Wilkie,	Bogagh, Ballindrait,	2	0	0
Clonleigh,	Patk. Friel,	Clonleigh, Lifford,	4	0	0
St. Johnston,	Thomas Magee,	St. Johnston,	1	0	0
Ballybogan,	Chas. Burns,	Ballybogan, Lifford,	1	0	0
Kilmacrenan.	Manus O'Donnell	Kilmacrenan,	2	2	0
Cooley,	Michl. Bonner.	Cooley. Moville,	3	0	0
Raymoghey.	Hugh Roarty.	Ray, Manorcunningham.	1	0	0
Tully,	Chris Leavy,	Drummond. Ramelton,	4	0	0
Naran	Peter M'Loone.	Naran. Glenties,	3	0	0
Killybegs, (St. Catherine's)	Patk. Carr (Jas.)	Roshine. Killybegs,	2	0	0
X **Clonmany.**	Patk. Kelly,	Clonmany,		4	6

X Ex-Soldier's Grave.

SANITARY SUB-OFFICERS IN COUNTY DONEGAL.

Name of District.	Name of Officer.	Annual Salary. £	s.	d.
BALLYSHANNON	Mary Gillespie,	25	0	0
DONEGAL	Joseph McCloskey	25	0	0
PETTIGO	John Travers	10	0	0
DUNFANAGHY	Joseph McIllwaine	15	0	0
DUNGLOE	James O'Donnell	10	0	0
GLENTIES	John P. Doherty	10	0	0
CARRICK	Maurice Byrne	10	0	0
CARNDONAGH	Mary Lynch	10	0	0
MOVILLE	P. V. McLaughlin	10	0	0
CLONMANY	William Grant	10	0	0
BUNCRANA	J. J. Doherty	26	0	0
AILEAGH	Mrs Rose M'Laughlin	48	0	0
LETTERKENNY	N. S. Browne	32	0	0
MILFORD	Hugh McBride	10	0	0
RATHMULLAN	Dan Dunleavy	10	0	0
ROSGUILL	Dan McBride	5	0	0
CLOGHAN and STRANORLAR	Bernard Griffin	20	0	0
KILLYGORDON	Bernard Griffin	10	0	0
CASTLEFIN	Ernest Alexander	32	0	0
RAPHOE	James McGarron	24	0	0

PART II.

ANNUAL REPORT

of the

COUNTY MEDICAL OFFICER OF HEALTH

COUNTY DONEGAL

on the

COUNTY SCHOOL MEDICAL SERVICE.

YEAR 1941.

Annual Report of the County School Medical Service.
Year 1941.

Total Number of Schools in the County,	387	1937 figures.
Total School Population,	23,159	

The total number of children examined in 1941 was 5,493 as compared with 5,106 in 1940.

All children presenting themselves for examination were examined in each school visited. Out of a roll total of 13,722 we had therefore 5,493 examined, that is to say 40 per cent.—much the same figure as for previous years.

ATTENDANCE OF PARENTS.

Forty-six per cent. of parents attended personally at the school inspection. The figure is somewhat lower than for last year.

VISUAL DEFECTS.

The incidence of defective vision in 1941 was 1,085 cases out of a total of 5,493 children examined, i.e. 19.8 per cent. as compared with 15.9 per cent. last year. The following table shows the annual incidence since 1936 :—

YEAR.	1936	1937	1938	1939	1940	1941
Percentage of children with Defective Vision (Co. Donegal).	26.0	16.9	17.4	16.8	15.9	19.8

The following report was kindly supplied by Dr. G. O'Donnell, County Ophthalmic Surgeon :—

"During the year 1941-42, I examined 756 children with defective vision. There were no cases of Trachoma or Interstitial Keratitis amongst the children. The attendances were very good, especially when the transport difficulties are taken into consideration.

Eye Diseases encountered amongst the children during 1941.

Albinism,	2.
Blepharitis,	14.
Cataract (Congenital),	3.
Cataract (Traumatic),	1.
Charazion,	2.
Corneal Ulcers (Phlyctenular),	5.
Conical Cornea,	1.
Conjunctivitis (Angular),	2.
Conjunctivitis (Catarrhal),	2.
Entropion,	1.
Episcleritis,	1.
Myopia (High),	29.
Nystagmus,	8.
Optic Atrophy,	1.
Defective Vision due to old injuries,	1.
Ptosis (3rd nerve),	1.
Strabismus,	161.

Dental Report for the Year 1941.

For the year 1941 eighteen Dental Clinics were held in South West Donegal and 558 children attended and were treated.

On the whole the attendance was fairly good. I have noticed that where the average attendance is not good it is usually due to some one school in the area from which only a few or perhaps no children attend and again I have noticed that certain families are notified of Clinic after Clinic but never attend. Those who do attend—parents and children—appreciate the benefits of the scheme.

The standard of dentition is not improving as much as I would like and unfortunately the want of proper and necessary foods in war-time will have a very deleterious effect. Some hope lies in the more widespread use of oatbread and children now must eat the crusts which were so often thrown away. Masticating a little more will develop their jaws and teeth.

Owing to the scarcity of Petrol it is becomming increasingly difficult to 'carry on' but let us hope that the scheme which is beginning to bear fruit will be kept alive until better times return.

JOSEPH R. KELLY,
Schools Dental Officer.

20th May, 1942.

NON-PULMONARY TUBERCULOSIS.

(School Medical Inspection). (Children).

One old case was seen during School Medical Inspection. This was a healed tuberculosis of the hip, with shortening of the right leg. This patient was sent to Cappagh Hospital in 1933 suffering from active tuberculosis of hip with multiple discharging sinuses. He had had continuous treatment in the hospital until 9/5/1939 when he was discharged "soundly healed".

No new cases were discovered.

PULMONARY TUBERCULOSIS.

(School Medical Inspection).

Two cases of definite clinical pulmonary tuberculosis were found during routine School Medical Inspection. One was a boy 8 10/12 years, the other a girl ages 12 3/12. In neither case was the origin of the infection traced. Both occurred in the northern half of the county.

Twelve further cases were placed under observation and x-ray examinations advised. Unfortunately only two of these would agree to the latter procedure. Both were found not to suffer from active pulmonary disease.

HEART DISEASE.

The following table shows the age and sex incidence of the twenty-one cases discovered in 1941.

Age	No.	Male.	Female
5— 7	4.	2	2
7— 9	6.	1	5
9—11	3.	—	3
11—13	5.	2	3
13—15	3.	2	1
TOTALS,		7	14

Of these twenty-one cases, the following is the most probable classification as regards primary causation :

Rheumatism,	...	7
Congenital,	...	5
Scarlet Fever,	...	1
Unknown,	...	8

The eight cases of unknown cause may possibly be attributable to disregarded attacks of scarlet fever or rheumatism.

Heart Cases.

Clinical Details.

(1) A.L. Male. 11½ years. **Congenital** ?

(2) C.G. Male. 14 4/12 years. Mitral Systolic murmur. History of growing pains.

This child attended at the tuberculosis dispensary as a contact case. There was a blowing systolic murmur in the mitral area and the heart was apparently enlarged. X-ray examination in February 1941 showed a rather enlarged heart—no definite evidence of pulmonary tuberculosis. There was a **vague history of rheumatism** at 6 years of age.

This child is pale, thin and looks under-developed.

(3) C.G. Female. 11 9/12 years. Sister of (2) above.

Child well developed and well-nourished. Pulmonary systolic murmur. Rather high colour. No history of rheumatism or scarlet fever. **Probably congenital.**

It is interesting to find that this child's father was in bed for 21 weeks in 1928 with acute rheumatism. One brother died of kidney trouble, another of pulmonary tuberculosis and a sister suffers from non-pulmonary tuberculosis

4. K.O'D. Female 7½ years. Double mitral murmurs and anaemia.

This patient had **Rheumatic Fever** 3 years ago in Glasgow in 1939 and was laid up for one month. She had a second attack in February 1941 in Glasgow, and was in bed for 6 weeks. She has been in Ireland since April 1941.

5. P. J. Male. 5 8/12 years. Pulmonary systolic murmur transmitted in all directions. No history of Rheumatic Fever or other illness. Had heart attack at age of 2 years. **Probably congenital.** He suffers from ptosis of eyelids.

6. S.G. Female. 7 7/12 years. Marked systolic mitral murmur. No history of rheumatic fever. **Probably congenital.**

7. B.McG. Female. 11 years. No history of illness of any sort. Rough mitral systolic murmur.

8. A J. McG. Male. 6½ years. Very nervous type of child with twitching of left hand **suggestive of chorea.** Definite mitral systolic murmur.

9. Y.D. Female. 10 7/12 years. Acute Rheumatism at age of 4 — in bed 11 weeks. Chorea 2 years ago for two weeks — passed off spontaneously. Double mitral murmur.

10. S.M.H. Female. 5 4/12 years. No history obtainable at examination. Diagnosed as organic heart disease.

11. L. G. Female. 8 years. Mitral systolic and pulmonary systolic murmurs. No history of Rheumatism. **Probably congenital.**

12. M. G. Female. 6 4/12 years. Suffers from Jacksonian Epilepsy. No history of Rheumatic Fever. Mitral systolic murmur present.

13. R. McA. Female. 8 8/12 years. **Subject to Rheumatic Pains.** Systolic mitral murmur present.

14. M. McM. Female. 10 5/12 years. **Rheumatic Fever at 6 years** — off school for 2 years. Mitral systolic murmur completely obliterating 1st sound.

15. H. L. Male. 7 4/12 years. No history whatever of Rheumatism. Extra-systolic occurs about once in every 8 beats.

16. B.T.D. Female. 9 4/12 years. Organic mitral murmur. No history of Rheumatism. Tonsils and Adenoids much enlarged.

17. J. D. Female. 8½ years. Organic mitral disease. No history of Rheumatism.

18. J. B. Male. 11 years. Slight muffling of 1st sound in mitral area following **pains in right knee** about 1 year ago.

19. S. McPh. Female. 11½ years. **Scarlet Fever in 1937.** Mitral systolic murmur present.

20. J. C. Male. 13 5/12 years. No history of Rheumatic Fever, Scarlatina or sore throat. Only complaint is pains in stomach off and on. Definite mitral systolic murmur. Heart condition not detected at previous School Medical Inspection in 1937.

21. T. G. Female. 13 4/12 years. No history whatever of Rheumatic Fever or Scarlatina. Organic mitral murmur present. Condition not detected at previous School Medical Inspection in 1937.

It will be noted that these last two cases presumably developed their cardiac disabilities in the period intervening since the first School Medical Inspection in 1937.

Rheumatism Clinics.

The rheumatism clinic, as now established in many countries is of great value in estimating the extent of cardiac disability in suspected cases of heart disease in children. It happens not infrequently in congenital cases that very marked physical signs may accompany a rather trivial lesion, and unless accurately diagnosed by expert clinical and radiological examination, these children run the risk of being condemned to a life of permanent invalidism or at least of inactivity. Radiological investigation is of great importance in these cases, and its value cannot be over-estimated.

Thus the chief function of the rheumatism clinic or cardiac centre is diagnosis. The three important points it has to settle are :

(1) Is the case one of rheumatism ? (2) Is the disease active ?

(3) Is there damage to the heart muscle ?.

IMMUNISATION AGAINST DIPHTHERIA.

No official scheme was carried out during 1941. Since 1935, the total number of children immunised under the direction of this department is 11,619. Many other children have probably been immunised by private medical practitioners.

The following table shows the incidence and mortality from diphtheria in the county since 1935 :

Table showing the Number of Cases of Diphtheria Notified and number of Deaths for each of the years 1935 to 1941. (County Donegal).

Year.	No. of cases notified.	No. of Deaths.
1935	70	8
1936	34	4
1937	80	8
1938	61	9
1939	55	5
1940	29	4
1941	29	4

SCHOOL MEALS.

During the year 1941, a sum of £2,804 14s. 2d. was paid by the Board of Health for Meals supplied to children attending National Schools in the scheduled area under the School Meals (Gaeltacht) Act, 1930. A further sum of £50 6s. 7d. was paid for administration expenses. The scheme was operated in 111 schools.

BUNDORAN.

The Meals Scheme operated from 3-11-1941 to 31-3-1942. The average daily attendance 32.06. 94 school days in period. The scheme is under the supervision of three members—one member of the Legion of Mary, one member of the St. Vincent de Paul and the Parish Priest. Food same as last year.

BALLYSHANNON.

The Scheme is in operation in 3 schools :

(1) St. Catherine's Convent,
(2) St. Joseph's (De la Salle Brothers'),
(3) Carrickboy N.S.

The food supplied is as net out in last year's report.

The meals are prepared and distributed in the Convent and Carrickboy Schools by the Sisters of Mercy, and in the Boys' School by the local troop of Catholic Boy Scouts under the superivision of the Principal Teacher.

14,713 meals were supplied during the financial year at a total cost of £93 13s 4d. The average cost per meal was 1.5279 pence.

SCHOOL BUILDINGS.

Of the 237 schools examined during the year, the following 100 were adversely reported on :

ALTAGHADERRY (KILLEA).

Three teachers and only two rooms.

ARDLAGHAN (CLOGHAN).

The school (built in 1847 and unrepaired since) is now entirely unsuitable for use as school-room. Roof, walls, floor, bad and beyond repair and dangerous. A new school is an urgent necessity.

ARDARA (4) (ARDARA).

Extension of town water supply recommended.

An tSEALGAIN (DOOCHARY).

Premises have been reported as unsuitable in 1937 and 1939. Roof, walls and floor in bad condition. Damp in winter. Stuffy in summer. No closets. No playground. A new school is badly needed.

AUGHNAHOO (PETTIGO).

Building antiquated. Floors, walls and roof in bad condition. Sanitary arrangements bad. A new school recommended.

BREDAGH GLEN (MOVILLE).

Gallery in Infants' room which should be removed. Lighting inadequate in Infants' room. No water supply.

BALLYKERRIGAN (CLOGHAN).

Building is unsuitable, old, damp. No playground. Closets unsuitable. A new school is required.

BOLTYFREE (CLOGHAN).

Building is old and damp. No playground. No cloak room. Closets unsatisfactory. A new school required.

BOYAGH (CASTLEFIN).

Closets are antiquated and unsuitable. There is no playground or cloakroom. Floors are in bad repair.

BALLYSAGGART (DUNKINEELY).

Floor, walls and roof in bad condition. Windows defective and unsuitable. New School urgently required.

BALLYMORE (DUNFANAGHY).

No cloak room.

BARNESMORE (DONEGAL).

The school is cold and draughty. The roofs of both class-rooms are in a dangerously unsafe condition.

BALLYDEVITTE (DONEGAL).

New school under construction and practically completed.

BALLYBOES (CROSS-ROADS — FALCARRAGH).

Gable wall of Infants' room (west-end) quite damp. Wainscotting separating from wall, which is not plastered underneath. Requires immediate attention.

BALLEIGHAN (MANORCUNNINGHAM).

Lighting in this school very bad. Only one room for two teachers — recommend that it be partitioned. Sanitary accommodation defective.

CARRIGANS (KILLEA).

Playground space practically nil.

CLOUGHROE (STRANORLAR).

No cloak room. Closets require repairs.

CORRADOEY (STRANORLAR).

Provision of cloak room and playground, and repair of closets needed.

CONVOY (STRANORLAR).
Requires second fire-place and some arrangement for water supply. Playground space inadequate.

COMMEEN (CLOGHAN).
The school is overcrowded, dark, damp and unsuitable. Both teachers have to work in a single overcrowded room. New school recommended.

CARRIGART (ROSGUILL).
One room, two teachers. Recommend partition to be erected and a fireplace at other end of room. Sanitary accommodation defective.

CROSSCONNELL (CLONMANY).
Sanitary accommodation defective. Lighting inadequate.

CARROWREAGH (KILLEA).
Leak in roof causing dampness in the room used by children. Other room not used as insufficiency of attendance. Chimney in other room smokes.

CRONAGHBOIS (ARDARA).
Building antiquated. Windows unsuitable. Ventilation bad—"blow-down" from chimneys. Floor in bad repair. Both teachers have to work in one unsuitable room. A new school required.

CORROVADY (LETTERKENNY).
Sanitary accommodation bad. Repairs required to closets. No playground.

CASTLEFIN BOYS' (CASTLEFIN).
The school is overcrowded and both teachers have to work in one room. A new school is recommended.

CASTLEFIN GIRLS' (CASTLEFIN).
School is overcrowded and both teachers have to work in one room. A new school is recommended.

CLOUGHFIN (CASTLEFIN).
The building is unsuitable in every respect. A new school is badly needed.

COOLADAWSON (KILLYGORDON).
The building is very old and unsuitable. Lighting and ventilation inadequate. No playground. A new school is recommened.

COAST AND ISLAND (FANAD).
No cloak room or playground School is below the road level and is very cold, having a cement floor. Infants up to 8 years only attend here, then go to Leatbeg.

CASHEL 2. (FANAD).
Playground rocky and rather small.

CREESLOUGH (CREESLOUGH).
Cloak room inadequate.

CASHELNAGOR (CROSS ROADS — FALCARRAGH).
Sanitary accommodation unsuitable. Playground inadequate.

CARROWCANNON GIRLS' (CROSS ROADS — FALCARRAGH).
Overcrowded. Heating arrangements unsatisfactory. Lighting bad. No playground.

CARROWCANNON BOYS' (CROSS ROADS — FALCARRAGH).
Sanitary accommodation defective. One room only for two teachers—recommend that it be partitioned.

DRUNG (MOVILLE).
Lighting inadequate in Infants' room.

DOIRE THANAIDHE (DOOCHARY).

See 1937 and 1939 reports. Building unsuitable in every way as a school. A new school is badly needed.

DOAGHBEG (FANAD).

In infants' room, east wall damp at roof.

DROMORE (KILLYGORDON).

No water supply convenient to school.

DUBHCORADH (DOOCHARY).

Overcrowded.

DUNKINEELY (DUNKINEELY).

Smaller classroom overcrowded. Requires to be enlarged and provided with separate entrance.

DRUMFRIES (BUNCRANA).

Lighting inadequate in Infants' room owing to trees.

DONEGAL (DONEGAL).

Playground space inadequate.

EDNACARNON (CHURCHILL).

No cloak room.

GORTNABRADE (ROSGUILL).

Cloak room inadequate.

GLENDOOIN (LETTERKENNY).

No playground.

GORTNACART (ARDARA).

The schoolroom is very overcrowded and both teachers have to work in one room. An additional classroom is an urgent necessity.

GROUSEHALL (CARNDONAGH).

No cloak room.

GLENTIDALLY (RAMELTON).

No playground.

GLENEELY (KILLYGORDON).

There is no cloak room. Both teachers work in one room.

GLENCOAGH (MOUNTCHARLES).

Sanitary accommodation inadequate. Lighting insufficient in front room.

HUGH ROE, DONEGAL (DONEGAL).

Recommend installation of flush closets.

ILLISTRIN CATHOLIC (LETTERKENNY).

No cloak room. Sanitary accommodation requires repairs to roof.

INVER (TANATALLON).

No water supply for drinking convenience.

KINNELARGY (ROSGUILL).

School has two teachers—only one room. Strongly recommend partition to be erected so that each teacher can have a separate room.

KILLYGORDON (KILLYGORDON).

No cloak room.

KNOCK (KILLYGORDON).

Definitely unsuitable as school. Building old and in bad repair. Heating inadequate. Closets bad. No playground. A new school is badly required.

KERRYKEEL (FANAD).

Condemned. Site procured for School but condemned by Board of Works owing to sewerage having to be taken through private property.

KILDARRAGH (DUNFANAGHY).

School condemned at each School Medical Inspection.

LISINISK (STRANORLAR).

Provision of water supply for drinking and washing purposes needed.

LETTERSHAMBO (CLOGHAN).

Building old, damp and unsuitable. No sanitary accommodation.

LARGYNASERAGH (ARDARA).

Playground waterlogged in wet weather. Closets unsuitable.

LETTERKENNY BROTHERS' (LETTERKENNY).

Lighting in Infants' room is still unattended to. Ventilation bad. Practically no playground.

LETTERLEAGUE (LETTERKENNY).

Only one room and two teachers. Strongly recommend a partition to be erected so that each teacher will have a separate class room. (Plans with Board of Works for improvements in School).

LISMULLYDUFF (KILLYGORDON).

Both teachers have to work in one room which is often overcrowded. An extension of the building and a partition is strongly recommended.

LACKRUM (DONEGAL).

The school is very damp. The heating is inadequate.

MANORVAUGHAN (ROSGUILL).

Sanitary accommodation defective. Lighting inadequate.

MOVILLE BOYS' (MOVILLE).

Sanitary accommodation defective. Lighting inadequate in Infants' room.

MEENCARRIGAGH (CLOGHAN).

Sanitary accommodation defective. Playground too small.

MURLOG (CASTLEFIN).

Fireplaces in all classrooms are too small and give insufficient heat. Classrooms are draughty. Recommended installation of central heating.

MONREAGH (KILLEA).

Lighting inadequate.

MEENAVALLEY (ARDARA).

Both teachers work in a signle room.

MALIN (MALIN).

Gallery in Infants' room.

MALIN HEAD (MALIN).

Repairs urgently required to Closets. Windows too high in Infants' room. A well required for School's own use.

MIN A' GABHANN (DOOCHARY).

Playground would require to be drained and levelled.

MEENGLASS (KILLYGORDON).

The building is old, damp, dark and in bad repair. Unsuitable as a school. A new school is recommended.

MEENATOLE (RAMELTON).

Plaster of ceiling of roof of porch (used as cloak room) in unsafe—always falling down, especially after a storm, and is dangerous to the children.

MEENACAHAN (TANATALLON).

Walls damp. Floor defective. Ceiling plaster has fallen in parts—some parts remaining are dangerous. Heat and light inadequate.

MASSINASS' BOYS (DUNFANAGHY).

Two teachers and only one room. Recommend partition and fire-place at lower end of room. Playground rather small.

MASSINASS GIRLS' (DUNFANAGHY).
Only one classroom and two teachers. Recommend that partition be put up and fire-place installed at lower end of school. Playground rather small.

MURROE (DUNFANAGHY).
Cloak room inadequate. Only one classroom and two teachers. Recommend that partition be put up.

NARIN (ARDARA).
Lighting inadequate. (School about to be closed down).

NUALA CONVENT (DONEGAL).
Sanitary accommodation not adequate or suitable.

ROOSKEY (CASTLEFIN).
The building is unsuitable as a school. Damp, dark and badly ventilated. Closets inadequate. A new school is strongly recommended.

RAMELTON CATHOLIC (RAMELTON).
Sanitary accommodation too near school. Lighting inadequate. No cloak room. Playground inadequate. Plans have been prepared for reconstruction of school.

RASHEDOG (CHURCHILL).
One door broken on boy's side of closets.

STRANORLAR GIRLS' (STRANORLAR).
Increase in number of closets and provision of lavatories required.

STRANORLAR (ROBERTSON).
Requires provision of new flush closets connected to town sewers.

SHROVE (MOVILLE).
Playground unsuitable.

ST. COLUMB'S (MOVILLE).
Lighting inadequate.

SESSIAGHONEILL (KILLYGORDON).
Building antiquated and unsuitable. No playground. Lighting defective. Closets inadequate. New school recommened.

SHANNAGH (LAGHEY).
No cloak room.

TAMNEY ROBERTSON (FANAD).
No cloakroom or playground.

TULLYBEG (RAMELTON).
Two teachers. Only one room. Recommend partition to be built.

TEMPLEDOUGLAS (CHURCHILL).
Sanitary accommodation structurally dangerous. Playground too small.

TRENTAGH (CHURCHILL).
School condemned at each School Medical Inspection.

TULLYDISH (BUNCRANA).
Require a well to be provided as no water supply except at a house half-a-mile away.

WHITECASTLE (MOVILLE).
No playground.

WELCHTOWN ROBERTSON (CLOGHAN).
Playground too small.

WOODLANDS (LETTERKENNY).
Two teachers and only one room. School requires enlargement, a partition, 2 windows in south side for lighting purposes. Playground space inadequate.

SUMMARY OF INSPECTION & DEFECTS

TABLE A.

Showing total number of children inspected during the year 1941, grouped according to Dispensary Districts, and the attendances of parents at the actual inspections.

DISPENSARY DISTRICT.	Number on Roll.	Total No. Inspected.	First Inspection.	Second Inspection.	No. whose Parents Present.
ARDARA.	529	239	83	156	217
An Breacaigh (Ardara) ...	59	20	4	16	17
Ardara Mixed (Woodhill) ...	15	3	1	2	3
Ardara (4) ...	94	35	18	17	34
Beagh ...	22	20	6	14	16
Cronaghbois ...	42	22	3	19	20
Garrowart ...	11	—	—	—	—
Gortnacart ...	56	17	6	11	7
Kiltoorish (Rosbeg) ...	20	18	17	11	18
Largynaseragh ...	23	4	—	4	4
Loughros Point (Drimitten) ...	18	11	3	8	10
Meentinadea ...	32	4	1	3	4
Meenavally ...	50	18	13	5	18
Narin ...	7	—	—	—	—
Sgoil Dhallain Forgaill, Portnoo,	50	47	14	33	46
Sgoil Leac Conaill ...	30	20	7	13	20
BUNCRANA.	1000	318	109	209	100
Drumfries (St. Patrick's), ...	57	9	6	3	3
Fathan Mura Iochtar, Buncrana,	40	9	5	4	2
Kinnego (St. Brigid's), ...	53	13	6	7	8
Lower Illies (St. Joseph's), ...	80	33	4	29	—
Meenagh Boys', ...	50	15	7	8	7
Scoil Naisianta an Chroidhe Ro-Naomhtha, Buncrana, ...	333	98	39	59	43
St. Patrick's G. Glebe, Desertegney	60	20	7	13	7
St. Columba's Boys (Buncrnaa),	128	72	18	54	16
St. Mary's (Buncrana), ...	94	25	8	17	7
St. Oran's (Buncrana), ...	52	13	5	8	7
St. Barthen's Tullydish, ...	53	11	4	7	—

TABLE A. —— Continued.

DISPENSARY DISTRICT.	Number on Roll.	Total No. Inspected.	First Inspection	Second Inspection	No. whose Parents Present.
CARNDONAGH.	659	209	92	117	94
Gleann Daoiligh (Gleneely) ...	12	7	6	1	—
Glentogher Convent, Carndonagh,	78	33	11	22	8
Naomh Brighde, Carndonagh, ...	89	21	14	7	7
Naomh Columchille, Carndonagh,	61	11	6	5	6
Scoil Clochar Padraig Naomhtha Carndonagh ...	173	77	36	41	55
Sgoil Padraigh, An Ceathramha Mor, ...	53	15	1	14	8
Sgoil Muire, Gleann Dhaoiligh,	80	23	10	13	2
St. Patrick's Boys, Carndonagh,	113	22	8	14	8
CASTLEFIN.	389	436	204	232	236
Alt No. 2., ...	29	2	1	1	—
Ballindrait, ...	24	11	6	5	4
Boyagh, ...	76	7	3	4	4
Carnowen, ...	57	50	23	27	14
Castlefin No. 2., ...	44	13	4	9	6
Castlefin No. 1. (B), ...	74	40	17	23	32
Castlefin Girls', ...	78	50	22	28	36
Cloughfin, ...	54	21	2	19	15
Lifford, ...	12	8	3	5	5
Rooskey, ...	49	43	18	25	30
Scoil Brighde, An Ailt, Castlefin,	73	34	19	15	28
St. Patrick's, Murlog, ...	227	97	58	39	28
Tievebrack, ...	98	60	28	32	34
CHURCHILL.	213	64	24	40	19
Ednacarnan, ...	40	21	5	16	—
Gartan, ...	17	4	1	3	—
Keelogs (2), ...	40	3	1	2	—
Rashedog, ...	33	8	7	1	4
Templedouglas, ...	42	18	6	12	12
Traintagh, ...	16	5	2	3	3
Glendowan, ...	25	5	2	3	—
CLOGHAN.	470	279	106	173	136
Ardlaghan, ...	25	9	4	5	3
Ballykerrigan, ...	49	11	5	6	—
Boltifree, ...	43	26	15	11	6
Brockagh, ...	42	29	9	20	17
Commeen, ...	58	21	10	11	6

TABLE A. —— Continued.

DISPENSARY DISTRICT.	Number on Roll.	Total No. Inspected.	First Inspection.	Second Inspection.	No. whose Parents Present.
Dooish, ...	73	53	20	33	39
Letterbrick, ...	40	33	10	23	20
Lettershambo, ...	14	13	5	8	5
Meencarigagh, ...	34	33	11	22	27
Sgoil Trean Caol, ...	59	41	12	29	12
Welchtown, ...	33	10	5	5	1
CLONMANY.	639	199	92	107	89
Crossconnell, ...	72	21	17	4	12
Gaddyduff Boys', ...	111	30	16	14	16
Gaddyduff Girls', ...	102	36	15	21	21
Rashenny, ...	56	20	14	6	13
Sgoil Bheal Tragha Island of Doagh, ...	53	19	7	12	10
Tiernasligo Boys', ...	67	12	5	7	1
Tiernasligo Girls', ...	94	41	8	33	10
Cloncha, ...	84	20	10	10	6
CROSSROADS No. 1. (FALCARRAGH).	907	257	110	147	103
Ballyboes, ...	130	31	13	18	19
Carrowcannon (Boys'), ...	77	18	13	5	10
Carrowcannon (Girls'), ...	69	25	10	15	7
Cnoc na Naomh, Gortahork, ...	121	42	8	34	19
Gort an Choirce, ...	220	46	25	21	22
Magheraroarty, ...	60	10	4	6	1
Meenderry, ...	96	50	25	25	20
Ray, Falcarragh, ...	14	7	4	3	—
Scoil Caiseal na g-Corr, ...	120	28	8	20	5
DOOCHIARY.	447	216	113	103	149
Ballinamore, ...	49	15	8	7	6
Derryhenny, ...	48	30	15	15	17
Dubh Choradh, ...	77	30	16	14	20
Glenleighan, ...	41	23	9	14	15
Kingarrow, ...	42	17	8	9	3
Loughmuck, ...	17	10	4	6	8
Min A Ghabhann, ...	54	35	22	13	31
Scoil Dumhaighe, ...	41	27	15	12	20
Sgoil Leitir Mhic An bhaird, ...	52	29	16	13	29
Shallogans, ...	26	—	—	—	—

TABLE A.—Continued.

DISPENSARY DISTRICT.		Number on Roll.	Actal No. Inspected.	First Inspection	Second Inspection.	No. whose Parents Present.
DONEGAL.		662	180	86	94	82
Ballydevitte,	...	94	11	2	9	2
Cineal Conaill,	...	86	14	7	7	5
Clar (Robertson),	...	39	9	6	3	4
Donegal,	...	36	10	5	5	2
Hugh Roe Boys', Donegal,	...	116	42	19	23	20
Killymard,	...	18	4	2	2	2
Lackrum,	...	34	6	2	4	4
Lough Eske,	...	26	4	4	—	—
Nuala Convent, Donegal,	...	132	46	22	24	23
Sgoil Bhearnais Mhoir,	...	81	24	17	17	20
DUNFANAGHY.		481	181	44	137	100
Ballymore,	...	17	7	3	4	4
Creeslough,	...	21	9	1	8	4
Dunfanaghy No. 1.,	...	25	8	1	7	2
Dun Fionnachaidh,	...	59	18	6	12	6
Druim na Rath,	...	99	46	11	35	32
Fathar, Dunfanaghy,	...	51	25	6	19	10
Glasson,	...	23	12	2	10	7
Kildariagh,	...	41	15	6	9	12
Massinass Boys',	...	50	11	2	9	4
Massinass Girls',	...	50	17	3	14	10
Murroe,	...	45	13	3	10	9
DUNKINEELY.		403	173	75	98	138
Ballysaggart,	...	46	9	7	2	8
Bruckless,	...	23	10	4	6	4
Calhame,	...	33	10	4	6	2
Croagh,	...	56	28	11	17	26
Dunkineely (No. 2),	...	56	18	6	12	6
Killagtee,	...	31	13	5	8	13
Keelogs,	...	50	32	21	11	33
Scoil Naile Naomhtha Leagain,	...	71	40	15	25	38
Urbal, Bruckless,	...	37	13	2	11	8
FANNETT.		595	158	61	97	20
Ballymichael	...	49	11	6	5	—
Cashel No. 2	...	105	18	6	12	2
Croaghross	...	55	10	6	4	3

TABLE A. —— Continued.

DISPENSARY DISTRICT.	Number on Roll.	Total No. Inspected.	First Inspection.	Second Inspection.	No. whose Parents Present.
Drumfad	25	13	6	7	1
Kerrykeel	77	25	12	13	3
Leatbeg	17	4	—	4	—
Naomh Brighde Ballylarr,	49	11	2	9	1
Sgoil Padraig Naomhtha Drumhach Bheag	46	11	4	7	2
St. Davadogg's, Tamney	86	32	6	26	4
Tamney Robertson	30	4	3	1	—
St. Columba's, Ballyheerin,	51	17	10	7	3
Ballyheerin Coast and Island.	5	2	—	2	1
KILLEA.	303	136	69	67	22
An Ceathramhadh Riabhach Burt	16	7	1	6	—
Carrigans	22	15	4	11	2
Carrowan	71	14	8	6	4
Cross Roads	30	16	6	10	—
Monreagh	38	4	4	—	1
Scoil Alt Achadh Doire	98	67	43	24	10
Newtowncunningham (The Castle)	28	13	3	10	5
KILLYGORDON.	545	256	82	174	154
Cooladawson,	45	27	8	19	20
Dromore,	133	40	18	22	30
Donaghmore No. 2.,	48	29	3	26	9
Gleneely,	38	11	3	8	6
Killygordon,	28	18	9	9	2
Knock,	62	22	5	17	22
Lismullaghduff,	46	15	2	13	11
Meenglass,	38	18	10	8	6
Sessiaghoneill,	59	31	11	20	27
Scoil Padraig Naomhtha, Meenreagh,	48	45	13	32	21
LAGHEY.	143	66	23	43	40
Scoil na g Ceithre Maighisthre,	48	24	9	15	2
Scoil Earnain Naomhtha, Ballintra,	65	24	8	16	24
Shannagh,	30	18	6	12	14

TABLE A. —— Continued.

DISPENSARY DISTRICT.		Number on Roll.	Total No. Inspected.	First Inspection.	Second Inspection.	No. whose Parents Present.
LETTERKENNY.		953	347	154	193	172
Ballystrang,	...	21	15	6	9	8
Barkhall.	...	60	17	6	11	10
Cashelshanaghan,	...	24	11	8	3	1
Carrowvady,	...	48	17	8	9	9
Ellestrin No. 1.,	...	44	12	7	5	5
Ellestrin No. 2.,	...	16	5	4	1	3
Glencar,	...	30	10	3	7	3
Glendooen (2)	...	35	7	2	5	—
Letterleague	...	54	10	9	1	—
Letterkenny Robertson,	...	42	11	8	3	10
Scoil Clochar Columcille,	...	347	147	72	75	96
St. Eunan's Mony. N.S., Letterkenny,	...	165	65	13	52	13
Woodlands,	...	66	20	8	12	14
MALIN		555	178	91	87	27
Aughaclay	...	96	38	23	15	8
Culdaff	...	13	1	1	—	—
Malin Head	...	77	18	10	8	3
Malin	...	25	8	5	3	1
Naomh Buadain, Culdaff	...	57	22	13	9	1
Sgoil Chuil Caonaigh	...	163	61	23	38	9
Sgoil an Iorbaill Riabhaigh	...	124	30	16	14	5
MANORCUNNINGHAM		73	23	16	7	10
Balleighan,	...	73	23	16	7	10
MOVILLE		983	448	200	248	119
Bredagh Glen	...	47	20	6	14	—
Carrowkeel	...	34	16	5	11	3
Cluneelly	...	80	28	23	5	—
Carrickmaquigley	...	42	29	12	17	—
Clare	...	27	22	16	6	—
Castlecary	...	14	13	7	6	—
Drung	...	62	31	19	12	5
Glenagivney	...	46	22	8	14	15
Moville Convent	...	143	46	17	29	39
Moville Boys'	...	121	30	17	13	14
Sgoil Naomh Ultain, Baile Charraighe	...	41	31	12	19	18

TABLE A. —— Continued.

DISPENSARY DISTRICT.	Number on Roll.	Total No. Inspected.	First Inspection.	Second Inspection.	No. whose Parents Present.
Sgoil Columcille, Druim A'Mhaoir	106	39	11	28	9
Sgoil Mhuire, Shrubh ...	61	26	7	19	2
Sgoil Brighde, Moville ...	38	23	11	12	4
St. Patrick's, Carrowmeenagh ...	63	50	13	37	8
St. Columb's Protestant, Moville,	23	11	8	3	2
Whitecastle (or Cabry) Protestant ...	35	11	8	3	—
PETTIGO.	231	116	53	63	54
Aughnahoo, ...	100	50	22	28	19
Gortnessy, ...	27	9	4	5	—
Lettercran (2), ...	42	27	11	16	26
Pettigo, ...	19	13	9	4	5
Tamlaght, ...	43	17	7	10	4
RAMELTON.	406	176	76	100	59
Brownknowe, ...	13	3	1	2	—
Croaghan, ...	9	3	1	2	—
Gentidally, ...	14	5	3	2	—
Meenatole, ...	28	10	6	4	4
Ramelton (Mixed), ...	134	62	22	40	37
Ramelton, ...	62	22	9	13	2
Ray, Rathmullan, ...	24	17	6	11	—
Sgoil na Coilleadh Crine, ...	63	25	15	10	4
Tullybeg, ...	59	29	13	16	10
ROSGUILL	519	335	130	205	70
Aughadahar ...	37	10	4	6	5
Carrigart ...	54	34	19	15	2
Cranford ...	25	18	6	12	3
Derryhassen ...	66	43	15	28	9
Gortnabrade ...	86	55	15	40	14
Glen ...	60	46	23	23	7
Kinelargy (Robt.) ...	40	32	13	19	3
Meevagh ...	45	32	18	14	14
Manorvaughan ...	11	9	1	8	—
Mulroy ...	49	29	12	17	6
Sgoil Cuil, Cranford ...	46	27	4	23	7

DISPENSARY DISTRICT.	Number on Roll.	Total No Inspected.	First Inspection.	Second Inspection.	No. whose Parents Present.
STRANORLAR.	530	207	107	100	112
Broadpath, ...	58	30	13	17	18
Corradooey, ...	20	12	9	3	9
Convoy, ...	41	12	8	4	5
Cloghroe, ...	36	6	3	3	3
Lisinisk, ...	29	1	1	—	1
Meenbane, ...	29	8	5	3	6
Stranorlar Boys', ...	128	48	25	23	24
Stranorlar Girls', ...	130	64	27	37	36
Stranorlar Robertson, ...	59	26	16	10	10
TANATALLON.	587	296	116	180	214
Drimcoe, ...	16	9	4	5	5
Drumnaherk, ...	43	20	6	14	18
Frosses. ...	106	77	28	49	65
Glencoagh (Mixed), ...	123	31	18	13	21
Inver, ...	25	9	1	8	8
Meenacahan, ...	49	20	13	7	17
Munterneese, ...	46	25	11	14	14
Sgoil An Aird Bhain, ...	50	25	9	16	5
Sgoil An Chillin, ...	53	23	9	14	22
Sgoil Leitir Fhada, ...	45	28	8	20	16
Sgoil Leitir Mor, ...	31	29	9	20	23
GRAND TOTAL	13722	5493	2316	3177	2536

N.B. The "Number on Roll" given in Table A. refers to the **Schools which were actually inspected** in a particular Dispensary District during the year 1941. In some Dispensary Districts the inspection of the Schools was not completed during the year.

TABLE B.

Showing State of Children in Matters of Clothing, Footgear and Cleanliness.

	Un-satis factory	Percen-tage	Very Unsat isfac-tory	Percen-tage	Total	Percen-tage
Clothing	318	5.8	123	2.2	441	8.0
Footgear	102	1.9	51	0.9	153	2.8
Cleanliness of head	451	8.2	117	2.1	568	10.3
Cleanliness of body	149	2.7	98	1.8	247	4.5

TABLE C.

Giving a Summary of the Defects Discovered During the Year, 1941.

DEFECT OR DISEASE	Total	Percentage	Marked Degree or for Treatment.	Percentage	Moderate Degree or for Observation.	Percentage
Malnutrition	285	5.2	23	0.4	262	4.8
Ringworm of Body	6					
Ringworm of Head	8					
Impetigo	20					
Scabies	59					
Other Skin Diseases	16					
Carious Teeth	2886	52.6	2358	42.9	528	9.7
Defective Vision	1085	19.8	917	16.7	168	3.1
Squint	94					
Other Eye Diseases	53					
Hearing	10					
Ear Diseases	28					
Speech	11					
Tonsils and Adenoids	1446	26.3	1187	23.4	259	2.9
Cervical Glands	162	3.0	44		118	
Submaxillary Glands	31		16		15	
Heart Disease (Functional)	27					
Heart Disease (Organic)	27					
Anaemia	76	1.4	16		60	
Bronchitis	38					
Other Non-Tuberculous Lung Conditions	10					
Definite Pulmonary Tuberculosis	3					
Suspected Pulmonary Tuberculosis	25					
Surgical Tuberculosis	5					
Rickets	28					
Hernia	10					
Epilepsy	2					
Other Nervous Condition	3					
Postural Defects	58					
Deformities	70					
Infectious or Contagious Diseases	3					
Mental Condition	8		2		6	
Other Diseases or Defects	45					

TABLE D.

Showing the Number of Children Unvaccinated According to Dispensary Districts.

DISPENSARY DISTRICT.	Number Inspected.	Number Unvaccinated
Ardara, ...	239	8
Buncrana, ...	318	22
Carndonagh, ...	209	11
Castlefin, ...	436	44
Churchill, ...	64	1
Cloghan, ...	279	14
Clonmany, ...	199	6
Crossroad No. 1. (Falcarragh) ...	257	49
Doochary, ...	216	19
Donegal, ...	180	18
Dunfanaghy, ...	181	158
Dunkineely, ...	173	7
Fannett, ...	158	9
Killea, ...	136	10
Killygordon, ...	256	22
Laghey, ...	66	6
Letterkenny, ...	347	38
Malin, ...	178	21
Manorcunningham, ...	23	3
Moville, ...	448	33
Pettigo, ...	116	8
Ramelton, ...	176	9
Rosguil, ...	335	33
Stranorlar, ...	207	58
Tanatallon, ...	296	10
TOTAL, ...	5,493	617

TABLE E.

Classification of Certain Diseases and Defects Found During School Medical Inspection in the Year 1941.

SKIN DISEASES.

Alopecia Areata,	3
Eczema,	2
Ichthyosis,	1
Impetigo,	20
Psoriasis,	3
Ringworm of Body,	6
Ringworm of Head,	8
Scabies,	59
Urticaria,	1
Other Conditions,	5
Unclassified,	1
TOTAL,	109

EYE DISEASES.

Blepharitis,	31
Cataract (Congenital),	2
Conjunctivitis,	7
Corneal Opacities,	2
Defective Vision,	1,085
Ectropion,	1
Iritis,	2
Keratitis,	1
Nystagmus,	1
Photophobia,	1
Ptosis,	4
Strabismus,	94
Unclassified,	1
TOTAL,	1,232

EAR DISEASES.

Defective Hearing,	10
Mastoid Diseases,	1
Otitis Media,	1
Otorrhoea,	13
Other Conditions,	3
TOTAL,	28

NON-PULMONARY TUBERCULOSIS.

Tuberculosis of Bone,	1
Tuberculosis of Glands,	3
Tuberculosis of Joints,	1
TOTAL,	5

NERVOUS DISEASES.

Epilepsy,	2
Headache,	1
Nocturnal Enuresis	1
Other Conditions,	1
TOTAL,	5

DEFORMITIES.

Birth Palsy,	1
Cleft Palate,	3
Cleft Uvula,	2
Club Feet,	1
Club Fingers,	1
Congenital Deformities,	2
Genu Valgum,	7
Genu Varus,	1
Kyphosis,	1
Pes Cavus,	1
Pes Planus,	12
Rachitic Deformities,	12
Scoliosis,	2
Sequel to Injury,	5
Sequel to Polioencephalitis (Paresis etc.),	10
Talipes,	5
Torticollis,	4
TOTAL,	70

OTHER DISEASES OR DEFECTS.

Adenitis,	1
Adenoma Back of Tongue,	1
Angioma,	1
Carbuncles,	3
Cysts (Behind Ear),	1
Cysts Meibonian,	2
Cyst on Instep,	1
Cyst on Neck,	1
Cyst on Wrist,	1
Enlarged Spleen,	1
Goitre (Toxic),	1
Keratosis,	1
Lipoma,	1
Paraplegia,	1
Parasites (Intestinal),	1
Papilloma,	1
Perthes Disease,	1
Phimosis,	1
Pyorrhea,	2
Rheumatism,	2
Thyroid Disorders,	3
Undescended Testicles,	4
Very large Cranium,	1
Other Conditions,	12
TOTAL,	45

TABLE F.

Showing the Number of Operations for the Removal of Enlarged or Diseased Tonsils and Adenoids in the Various County Institutions during the Year 1941.

Ballyshannon District Hospital, ...	3.
Letterkenny District Hospital, ...	269.
Lifford District Hospital, ...	88.
Donegal District Hospital, ...	Nil.
TOTAL, ...	360.

TABLE G.

Giving Details of Dental Clinics Held During the Year 1941.

Total Number of Clinics held, ...	18.
Number of Children in attendance, ...	558.
Number of Children treated, ...	558.

TABLE H.

Giving Details of Eye Clinics Conducted by the County Ophthalmic Surgeon.

Number of Children examined, ... 746.

Number of Children for whom Glasses were prescribed, 711.

TABLE I.

Giving Summary of Treatment Afforded at the Eye and Ear Hospital, Derry, During the Year 1941.

1. EXTERN DEPARTMENT.
    Number of Children in attendance, ... 2.
    Number of Children treated, ... 1.
2. INTERN DEPARTMENT, ... Nil.

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